BHTA Lithium Battery Toolkit



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# How to Use This Toolkit

The British Healthcare Trades Association (BHTA) has created this toolkit at the request of its members, who wish to take industry-leading approaches to the safe use of Lithium Batteries (Li Batts). The BHTA has worked with DG Solutions, a market-leading consultant on dangerous goods to produce this guidance; if you have additional questions on Li Batts, please write to info@bhta.com and enquiries@dangerous-goods.co.uk.

Part 1 provides a plug-and-play template for a company's own Li Batt policy; companies can use this this to build a new policy or stress-test an existing policy

Part 2 provides a checklist of detailed information on key Li Batt processes and practices – classification, regulation, transportation, marking, etc. – for the three key corporate stakeholders in Li Batts in the assistive technology sector (Manufacturers, Distributors, and Retailers); companies can use this to ensure their processes and practices are best in class and to help define which parts of good Li Batt practice are the responsibility of which stakeholder.

Part 3 provides a checklist of critical Li Batt safety and usage information that Distributors and Retailers should share with Customers; it is a shortened version of [BHTA's Li Batt B2C guidance](https://www.bhta.com/lithium-battery-safety-guidance/), and companies can use it to shape consumer-facing practices.

Part 4 provides a checklist of critical Li Batt processes and practices around the transportation of Li Batts between companies and customers; companies can use it to determine which transport class to use for Li Batts, depending on type/condition/quantity of battery.

Part 5 provides a plug-and-play template for a company's end of life and disposal process and practices around Li Batts, including list-view templates, workflow-view templates, document retention maps, and decision-trees; companies can use this this to build a new policy or stress-test an existing policy.

The yellow highlighting denotes templates/wording that members can adapt for themselves.

The blue highlighting is for emphasis.

#

# TEMPLATE: Manufacturer/Distributor/Retailer Li Batt Policy

The following sets out [COMPANY’S] own policy regarding Li Batts.

## Objective(s)

What are the legal obligations in the UK with regard to Li Batts:

* Storage
* Transport
* End-of-life disposal (e.g take-back schemes, recycling, etc.)

What are the must-meet criteria – beyond UK legal obligations – for the treatment of Li Batts at [COMPANY]

In what instances might [COMPANY’S] must-meet criteria be superseded (e.g. by local regulatory requirements, insurance requests, etc.)

## Scope

This policy applies to [FACILITIES, BUSINESS UNITS, COUNTRIES, etc.]

In the [COUNTRIES, REGIONS, MARKETS, etc.] in which [COMPANY] operates, Li Batts are encountered in the following forms:

* Li-ion batteries sold on their own (i.e. Replacement Batteries or Additional Batteries)
* Li-ion batteries packed separately with other product(s) (i.e. Li Batt Powered Mobility Scooters, where the battery is packed in the same package as the Mobility Scooter)
* Li-ion batteries in assembled product(s) (i.e. Li Batt Powered Mobility Scooters which are shipped with the batteries pre-installed).

## Definitions

What kind(s) of Li Batts does [COMPANY] use:

* Lithium Metal
* Lithium Ion
* Other, specific types/combinations, if applicable, e.g. Lithium Iron Phosphate; Lithium Cobalt Oxide (small electronics); Lithium Manganese Oxide (portable power tools, medical instruments, some hybrid/electric vehicles); Lithium Nickel Manganese Cobalt Oxide (portable power tools, e-bikes, some scooters)

## References

Internal [COMPANY] References

* *Give Reference to Company Product Lists or Technical Data that shows which Li Batts are transported, and in what form (as above)*

## Risk Assessment

Risk assessment (general) – How do Li Batts fit into [COMPANY’S] overall risk assessment(s)

Risk assessment (specific) – What additional risk assessment is required at [COMPANY] in regard to Li Batts

## Procedures

At [COMPANY], the following procedures apply to Li Batts:

*Reference, or give details of internal procedures and documents (as applicable):*

* Sourcing
* Incoming Material – New Batteries [e.g. procurement policies/roles]
* Protective Measures – Storage [e.g. vermiculite]
* Protective Measures – Structural Fire Prevention [e.g. fire-resistant/separated rooms/areas; spacing]
* Protective Measures – Organisational [e.g. rejection/disposal of damaged batteries]
* Incoming Material – Used Batteries [e.g. take-back schemes]
* Outgoing Material – Transport [e.g. own-vehicle or partner-vehicle]
* Outgoing Material – Disposal/Recycling Partner(s)
* Staff Training

# PROCESS CHECKLIST: Manufacturer ↔ Distributor/Retailer Responsibilities

The following sets out processes and procedures governing how [COMPANY] structures its Li Batt responsibilities with other industry partners.

## Safe Use and Maintenance

What constitutes safe use and maintenance for each Li Batt type, configuration, and use profile in a company’s products and services?

During the procurement process, what information is required from the manufacturer for the safe use and maintenance of their batteries? For example:

* *When a new or existing battery type is being procured – is the manufacturer required to provide a User Manual for the device or product?*
* *What languages and style of writing is required?*
* *Is this user manual provided in different formats to be widely accessible?*
* *Is this reviewed internally during the Quality Approval Process for new or repeat product orders?*
* *Is this reviewed internally for logic, clarity, spelling and grammar and technical accuracy?*
* *Is this information rebranded or rewritten for corporate identity conformity?*
* *How is this information passed through the distribution chain to the end-user? (i.e. printed in the package, published on webpages, passed to distributors and retailers electronically, available in-store etc.)*

*If this process is documented, reference the internal Process, Procedure or other document number at the end of this section.*

## Marking

Li Batts may require marking, due to national and international regulations and this will need to be determined based on the battery type and intended market.

Give details on how the manufacturer or distributor determine which regulations your products may be in-scope of and how testing/assessments are conducted/funded. Who determines the correct application of marks, their size and their location.

The Importer or Distributor who “places the goods on the market” is legally responsible for ensuring the markings are correctly applied. Give details of who “places the goods on the market” and how they discharge these obligations.

*[COMPANY NAME] is considered the entity “placing the goods on the market” and is therefore legally responsible for battery marking accuracy and application.*

*During the procurement process, [COMPANY NAME] will require:*

* *Written RoHS statements from the manufacturer.*
* *A scale print proof for the battery casing, including all dimensions, which will show:*
	+ *Capacity Label*
	+ *RoHS Marking (if applicable)*
	+ *Waste Separation Marking*
	+ *UKCA Marking*

*As [COMPANY NAME] does not place any goods on the market outside of the UK, the print proof will be reviewed and signed off internally by the QA team, in accordance with Process Document Number [XXX].*

A non-exhaustive list of key markings to consider are:

* UKCA and/or CE Marking – The UKCA marking is the conformity marking used for products being placed on the market in Great Britain (England, Scotland and Wales) only; the CE marking is the conformity marking used for products being placed on the EU market.

  

* RoHS Marking – required if your battery of device contain any restricted hazardous substances (i.e. Lead, Mercury, Cadmium, Cr Vi, PBBs, PBDEs, DEHPs, BBPs, DBPs and DIBPs)
* Capacity labelling - you must label:
	+ portable rechargeable batteries with their capacity in milliampere-hours (mAh) with a whole number or ampere-hours (Ah) with only one digit after the decimal point
	+ You must make sure that the minimum size and location of capacity markings on batteries is as shown in the following table:

|  |  |  |  |
| --- | --- | --- | --- |
| **Type of battery** | **Location of marking** | **Minimum size of label on battery or battery pack (height x length)** | **Minimum size of label on packaging (height x length)** |
| **Portable rechargeable (except button cells and memory back up batteries)** | On the front of the packaging and on the individual batteries. If sold without packaging, on the battery or accumulator | 1.0 x 5.0 mm | 5.0 x 12.0 mm |
| **Rechargeable battery packs where the largest side is equal to or above 70 cm squared** | On the external housing of the cell’s assembly (individual cells inside the housing do not require marking) | 2.0 x 5.0 mm | Not applicable |
| **Rechargeable battery packs where the largest side is below 70 cm squared** | On the external housing of the cell’s assembly, individual cells inside the housing do not require marking | 1.0 x 5.0 mm | Not applicable |
| **Button cells and memory back-up batteries** | On the front of packaging | not applicable | 5.0 x 12.0 mm |
| **Automotive batteries and accumulators** | On the largest side of the battery but not on the bottom side | Covering at least 3% of the area up to a maximum of 20 × 150 mm | Not applicable |

* Waste Separation Marking (crossed-out wheeled bin symbol)



* + at least 3% of the surface area of the largest side of a non-cylindrical battery or battery pack, or
	+ at least 1.5% of the total surface area of a cylindrical battery, and, in either case, up to a maximum size of 5 cm x 5 cm
* If you intend to supply to the EU market, the new EU Battery Regulations are coming into force which affect many aspects of battery labelling, including the new “Battery Passport” and “Smart Labels” from 2026.
	+ These include: From 18 August 2026, batteries shall bear a label containing the general information on batteries:

1. information identifying the manufacturer in accordance with Article 38(7);

2. the battery category and information identifying the battery in accordance with Article 38(6);

3. the place of manufacture (geographical location of a battery manufacturing plant);

4. the date of manufacture (month and year);

5. the weight;

6. the capacity;

7. the chemistry;

8. the hazardous substances present in the battery, other than mercury, cadmium or lead;

9. usable extinguishing agent;

10. critical raw materials present in the battery in a concentration of more than 0.1 % weight by weight.

Part B: Symbol for separate collection of batteries

Part C: QR code

The QR code shall be in high contrast to the background colour and of a size that is easily readable by a commonly available QR reader, such as those integrated in hand-held communication devices

## Battery and Equipment Classification

At [COMPANY NAME] our products are classified for transport under the United Nations Recommendations on the Transport of Dangerous Goods, during the New Product Setup stage (see related process reference) and will be one of the following:

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Product Type | UN Number | Proper Shipping Name | Hazard Class | Packing Group | Tunnel Code | ADR Transport Category | EmS |
| Lithium Ion or Lithium Polymer Cells and Batteries shipped alone, without equipment | UN3480 | Lithium Ion Batteries | Class 9 | N/A | (E) | 2 | F-A, S-I |
| Lithium Metal Cells and Batteries, shipped alone, without equipment | UN3090 | Lithium Metal Batteries | Class 9 | N/A | (E) | 2 | F-A, S-I |
| Lithium Ion or Lithium Polymer Cells or Batteries shipped with the equipment they are intended to power | UN3481 | Lithium Ion Batteries packed with equipment | Class 9 | N/A | (E) | 2 | F-A, S-I |
| Lithium Metal Cells or Batteries shipped with the equipment they are intended to power | UN3091 | Lithium Metal Batteries packed with equipment | Class 9 | N/A | (E) | 2 | F-A, S-I |
| Lithium Ion or Lithium Polymer Cells and Batteries shipped when fitted into a piece of equipment1 | UN3481 | Lithium Ion Batteries contained in equipment | Class 9 | N/A | (E) | 2 | F-A, S-I |
| Lithium Metal Cells and Batteries shipped when fitted into a piece of equipment1 | UN3091 | Lithium Metal Batteries contained in equipment | Class 9 | N/A | (E) | 2 | F-A, S-I |
| Lithium Ion, Lithium Polymer, Lithium Metal Cells or Batteries shipped when fitted into a vehicle2 | UN3171 | Battery Powered Vehicle | Class 9  | N/A | (-) | N/A | F-A, S-I |

1 - vehicles are self-propelled apparatus designed to carry one or more persons or goods. Examples of such vehicles are cars, motorcycles, scooters, three- and four-wheeled vehicles or motorcycles, trucks, locomotives, bicycles (pedal cycles with a motor), mobility scooters and other vehicles of this type (e.g. self-balancing vehicles or vehicles not equipped with at least one seating position), wheelchairs, lawn tractors, self-propelled farming and construction equipment, boats and aircraft. This includes vehicles carried in a packaging. In this case some parts of the vehicle may be detached from its frame to fit into the packaging.

2 - Examples of equipment are lawnmowers, cleaning machines or model boats and model aircraft. Equipment powered by lithium metal batteries or lithium ion batteries

At [COMPANY NAME] our full product list and related classifications can be found in [ADD PROCEDURE OR DOCUMENT NUMBER].

## Battery Transport Safety Testing and Certification

Prior to transport, it will be established that every battery type that is procured, regardless of whether it is in equipment/vehicle or not, must have a valid UN 38.3 Test, and the Report and Test Summary will have been received, reviewed and filed by [COMPANY NAME] and can be found in [LOCATION].

The United Nations 38.3 Test comprises the following eight tests:

* Test T.1: Altitude Simulation
* Test T.2: Thermal Test
* Test T.3: Vibration
* Test T.4: Shock
* Test T.5: External Short Circuit
* Test T.6: Impact/Crush
* Test T.7: Overcharge
* Test T.8: Forced Discharge
	+ All cell types shall be subjected to tests T.1 to T.6 and T.8.
	+ All non-rechargeable battery types, including those composed of previously tested cells, shall be subjected to tests T.1 to T.5.
	+ All rechargeable battery types, including those composed of previously tested cells, shall be subjected to tests T.1 to T.5 and T.7.
	+ In addition, rechargeable single cell batteries with overcharge protection shall be subjected to test T.7.
	+ A component cell that is not transported separately from the battery it is part of needs only to be tested according to tests T.6 and T.8.
	+ A component cell that is transported separately from the battery shall be subjected to tests T.1 to T.6 and T.8.
	+ A cell or battery that is an integral part of the equipment it is intended to power that is transported only when installed in the equipment, may be tested in accordance with the applicable tests when installed in the equipment.

If a battery or cell used in [COMPANY NAME]’s product is changed, or redesigned, it will be assessed by the [TECHNCAL/PROCUREMENT team] to determine whether it should be retested. Retesting will be undertaken in line with the UN Manual of Tests and criteria requirements:

 Cells or batteries which differ from a tested type by:

(a) For primary cells and batteries, a change of more than 0.1 g or 20% by mass, whichever is greater, to the cathode, to the anode, or to the electrolyte;

(b) For rechargeable cells and batteries, a change in nominal energy in Watt-hours of more than 20% or an increase in nominal voltage of more than 20%; or

(c) A change that would lead to failure of any of the tests shall be considered a new type and shall be subjected to the required tests.

*NOTE: The type of change that might be considered to differ from a tested type, such that it might lead to failure of any of the test results, may include, but is not limited to:*

*(a) A change in the material of the anode, the cathode, the separator or the electrolyte;*

*(b) A change of protective devices, including hardware and software;*

*(c) A change of safety design in cells or batteries, such as a venting valve;*

*(d) A change in the number of component cells;*

*(e) A change in connecting mode of component cells; and*

*(f) For batteries which are to be tested according to T.4 with a peak acceleration less than 150gn, a change in the mass which could adversely impact the result of the T.4 test and lead to a failure.*

**The procurement team will also obtain evidence of the Quality Management System for the company manufacturing the batteries (i.e. ISO9001 Certificate).**

**All UN38.3 Reports are stored, as listed above, and all Sales, Customer Services, and Branch Teams are trained internally to know what they are, how they are found, and that downstream handlers and consumers can request them at any time and they should be provided.**

**In addition, these UN38.3 Test Certificates and all other relevant product approval and documents are also made available on our website on each product page.**

## Packaging

[COMPANY NAME] will ensure all batteries are properly packed, using packaging that is approved, as required under the International Regulations specific to the Mode of Transport used.

For Air Freight, the packaging must meet the requirements listed in the current version of the International Civil Aviation Organization (ICAO) Technical Instructions for the Safe Transport of Dangerous Goods by Air, and the current version of the International Air Transport Association (IATA) Dangerous Goods Regulations.

For Sea Freight, the packaging must meet the requirements listed in the current version of the International Maritime Organization’s International Maritime Dangerous Goods Code (IMDG).

For Road Freight, the packaging must meet the requirements listed in the current version of the Agreement Concerning the International Carriage of Dangerous Goods by Road (ADR), as implemented and amended for UK Transport, by The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009 (as amended).

Due to the requirements of the aforementioned Regulations, and taking-account of industry best practice, by **Road Freight (inc. imports and exports using The Channel Tunnel System) and Sea Freight** the requirements for packaging will include the following:

* New Cell and Batteries with a Gross Mass of <12kg or >12kg, which do not have a strong, impact-resistant outer casing, that are shipped on their own (not installed in equipment) – United Nations Performance Tested and Approved packaging must be used (UN Specification Packaging) of one of the following types:
	+ 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2, 3A2, 3B2 or 3H2 provided that they are approved for the carriage of Li Batt – obtain the UN Specification Certificate and Closing Instructions to verify.

All batteries shall be packaged in such a way that the individual cells and batteries cannot come into contact with each other, for example, due to the packaging being dropped. They should also be secured to prevent inadvertent movement within the packaging and all terminals shall be insulated, or otherwise be protected from accidental short-circuit with packaging materials, or other goods within the package.

* For new cells and batteries which are packed in the same packaging with the equipment that they are designed to power, the package should not exceed a piece of equipment, and two spare ‘sets’ of batteries. A ‘set’ should be considered the number of batteries required to power the equipment during normal operation. The batteries must be packed into a United Nations Performance Tested and Approved packaging must be used (UN Specification Packaging) of one of the following types:
	+ 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2, 3A2, 3B2 or 3H2 provided that they are approved for the carriage of Li Batts – obtain the UN Specification Certificate and Closing Instructions to verify.

Then subsequently be packed into a good-quality, strong outer packaging.

All batteries shall be packaged in such a way that the individual cells and batteries cannot come into contact with each other, for example, due to the packaging being dropped. They should also be secured to prevent inadvertent movement within the packaging and all terminals shall be insulated, or otherwise be protected from accidental short-circuit with packaging materials, or other goods within the package.

Alternatively, the entire battery sets and goods may be packed into a United Nations Performance Tested and Approved packaging must be used (UN Specification Packaging) of one of the following types:

* + 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2, 3A2, 3B2 or 3H2 provided that they are approved for the carriage of Li Batts – obtain the UN Specification Certificate and Closing Instructions to verify.

All batteries shall be packaged in such a way that the individual cells and batteries cannot come into contact with each other, for example, due to the packaging being dropped. They should also be secured to prevent inadvertent movement within the packaging and all terminals shall be insulated, or otherwise be protected from accidental short-circuit with packaging materials, or other goods within the package.

Example of UN Specification Marking on UN-Approved Packaging:



* New cells and batteries which are installed within the Vehicle, and shipped as a single unit considered UN3171, Battery Powered Vehicle, Class 9 (see Product and Equipment Classification section above).
	+ New or good working condition batteries when installed in a vehicle are not **considered Dangerous Goods by Road, Sea, Rail or Inland Waterway Transport.**
	+ The batteries cannot be damaged of defective (see Recycling Section below).
	+ As noted above, vehicles are self-propelled apparatus designed to carry one or more persons or goods.

Examples of such vehicles are cars, motorcycles, scooters, three- and four-wheeled vehicles or motorcycles, trucks, locomotives, bicycles (pedal cycles with a motor), mobility scooters and other vehicles of this type (e.g. self-balancing vehicles or vehicles not equipped with at least one seating position), wheelchairs, lawn tractors, self-propelled farming and construction equipment, boats and aircraft.

This includes vehicles carried in a packaging. In this case some parts of the vehicle may be detached from its frame to fit into the packaging.

* + If your device meets the definition of a “vehicle” and the battery is in new or fully working, undamaged condition, no UN Specification Packaging, marking or labelling, documentation or ADR Driver or Vehicle is required (Special Provision 388)
	+ Battery-powered vehicles are still considered Dangerous Goods for Air Freight.

## Transport Package Marking and Labelling

Depending on the Mode of Transport (Air, Road, Sea, Rail, Inland Waterway), differing labels and markings will be legally required to be on the package, with prescribed specifications.

As listed in the Training section above, the person packing, marking and labelling the goods is legally required to be properly trained, and The Consignor will be responsible for ensuring that packages are correctly marked and labelled, prior to handing over to The Carrier.

Regardless of the above, below is brief guidance on how packages should be marked and labelled for differing modes of transport.

#### Surface Transport (Road, Sea, Rail and Inland Waterway) marking and labelling example



**UN3480**

**Lithium Ion Batteries**

4G/Y60/S/24/GB/DGS001

NOTE 1

NOTE 3

NOTE 2

NOTE 4

* *NOTE 1 – The UN Number is required to be marked on the package, preceded by the letters “UN”, and* ***must be*** *in lettering of 12mm height, minimum, unless the package has a gross weight of less than 30kg, in which case they must be 6mm minimum height.*
* *NOTE 2 – Mandatory for sea freight but recommended for other modes of transport - The exact Proper Shipping Name (as listed in the associated regulations) must be clearly marked on the package.*
* *NOTE 3 – The Hazard Class Label (Model 9A label for Li Batts) must be applied to the package near to the UN Number and Proper Shipping Name. This must be of the exact design shown above (and in the relevant regulations) and must be in a square shape, set a 45° to display as a diamond and each side must have a minimum length of 100mm x 100mm.*
* *NOTE 4 – Where UN Specification packaging is required, this UN Specification marking* ***must be pre-printed on the package****. It must not be hand-written or otherwise applied/corrected.*

SEA FREIGHT REQUIREMENT - All marks and labels on the package must be of such quality, and applied in such a way that they are capable of surviving at least three-months’ immersion in the sea. There is an accepted standard for labels (BS5609) that if labels have been tested to, can be used to meet this requirement – see section below for example label suppliers list.

#### Air Transport marking and labelling example



4D/X60/S/24/GB/DGS001

**UN3090 Lithium Metal Batteries**

Net Qty: 1.5kg



NOTE 5



NOTE 9

NOTE 6

**Shipper:** Example Company, High Street, London, XX1 2XX, UK

**Consignee:** Example Company, High Street, Paris, 75000, France

24hr contact: +44(0)1273 569048

NOTE 7

NOTE 8

* *NOTE 5 – For Air Freight, the net quantity of Dangerous Goods (batteries) per package is required to be shown in many cases.*
* *NOTE 6 – For Air Freight, the Shipper address is required to be shown and should include company name, address and country. This is the actual origin address and may be different from Invoices and AWB.*
* *NOTE 7 – For Air Freight, the Consignee address is required to be shown and should include company name, address and country. This is the actual destination address and may be different from Invoices and AWB.*
* *NOTE 8 – In many cases, a 24/7 emergency contact number must be shown on the package and/or documents. This is a worldwide number used to get emergency response information from the shipper or their partner, should there be an issue in transport.*
* *NOTE 9 – Many Li Batt Shipments cannot travel on aircraft carrying passengers and will need to travel on freight aircraft only.*

### “Small” Li Batts (Section II and SP188)

If Lithium Ion Batteries have a power of 100Wh or less, or Lithium Metal Batteries have a lithium content of 2g or less, they are considered “Small” Li Batts and benefit from an exemption by all surface modes of transport i.e. Road, Rail, Sea and Inland Waterway (Special Provision 188), and by Air there are specific arrangements for these battery types (Section II).

These batteries are exempted from the need for any transport documents, have reduced labelling (as shown below) and staff who prepare these packages must still have training, although the content can be dramatically reduced.



NOTE 11

NOTE 10

NOTE 10 – This Li Batt mark/label, must show the relevant UN Number (see above Classification section),

NOTE 11 – This marking and labelling may be entirely removed where no more than two batteries/pieces of equipment are contained in a package, and there are no more than two packages in the consignment.

Additional Note – Where a label is required on the package for these batteries, a statement is required to be shown on the Airway bill (AWB). Trained team members will have a list of these statements for the batteries consigned (see below).

**Additional Note – Any “Small” batteries which are shipped without the equipment they are intended to power, are forbidden from air transport under any exemptions and must be consigned as full Dangerous Goods**

Additional Note – These marks/labels can be applied as a printed graphic, instead of a label provided that they meet all of the same requirements.

### BS5609 Label Suppliers:

* Labeline - <https://www.labeline.com/>
* Freight Merchandising Supplies - <https://fmslondon.co.uk/>
* Labels Online - <https://www.labelsonline.co.uk/>

## Inbound Transport and Documentation

Our general terms of purchase are on [an EX-WORKS, FOB, FAS, DAP, DDP] basis and therefore the supplier is responsible for properly packing, marking, labelling and documenting the goods for inbound transport.

The [Supplier is/We are] responsible for arranging inbound transport and will rely on the documentation provided by the supplier to do so.

All of our Freight Agents and Hauliers are on our approved haulier list, which can be found [HERE], and copies of their Insurance, DGSA Certificate and Vendor Information Form is renewed annually and held [HERE].

We will seek to verify that The Supplier has adequately trained teams and will seek this confirmation in writing (i.e. Email) prior to placing Purchase Orders.

## Goods In or Goods Receipt

Upon receipt of an order from the supplier, all battery marking, packaging, package marking and labelling will be inspected by a Trained Member of staff (see below).

In addition, the UN38.3 Test Certificate will be checked for congruency with the battery model received, and a visual inspection will be made to verify that the battery supplied is identical to the model shown on the UN38.3 Test Report.

If any of these inspections result in a disagreement or discrepancy, the goods will be quarantined and a non-conformance event report will be raised against the supplier for resolution by the procurement team.

## Transport and Distribution

### Own Transport

As a company, we will transport Li Batts and Devices on our own vehicles and with engineers. The following parameters and requirements apply to our own transport.

#### Transport with Engineers

If our batteries or devices are transported by our engineers, they will be exempted from any Dangerous Goods Transport requirements (under ADR Exemption 1.1.3.1 (c)). The restrictions on this are:

* The **purpose** of the journey cannot simply be delivery. The engineer must have another purpose for carrying the devices or batteries, such as assembly of the device or equipment, fitting or user training. The test is “Can a driver with no product knowledge undertake the delivery in place of the engineer?” If no, this will be exempted; if yes, this will be considered “Own Delivery” (see below). **NOTE: As listed above, Vehicles (i.e. mobility scooters and small batteries (SP188) are already exempted in their own right, so this paragraph can be ignored.**
* If the movement is considered “Transport with Engineers”, there are no requirements for Fire Extinguishers, Driver Training, Documentation or Packaging, Marking or Labelling. The total quantity of **Li Batts** carried, however, must not exceed 333kg. Device weight can be ignored for this calculation and any already exempted goods (vehicles and small batteries) can also be ignored for this calculation.

**NOTE: Although a 2kg Dry-Powder Fire Extinguisher is not legally required in this situation, it is still recommended to enable crews to deal with small/initial fires in wheels/engine to prevent spreading to The Load.**

#### Own Delivery

If our batteries are being moved on our own delivery vehicles and are not in-scope of any exemptions (Vehicles, Small Batteries and Transport with Engineers) they are subject to the ADR Small-Load requirements, up to 333kg of batteries per vehicle.

The Small Load requirements (up to 333kg) state that the driver must have the following:

* ADR Small Load Dangerous Goods Awareness Training (refreshed periodically). This training must be evidenced and held on their personnel training file.
* The vehicle must be fitted with a 2kg Dry Powder Fire Extinguisher (this must be in date, show the last service date, next service date (normally annual services), have a gauge to show that it is full, a pin to prevent accidental activation and an intact break-tag to prove that it hasn’t been used. This should be readily-accessible to the driver without delay.
* In the UK, no documentation is required to be carried by The Driver for Small Loads; however it is recommended that the driver has evidence that they are under the 333kg limit, if this is ambiguous in any way.

**NOTE: This Fire Extinguisher is intended for use to extinguisher Wheel and Engine fires (if safe to do so) to prevent spreading to the load. It is strongly advised that drivers and vehicle crew do not attempt to tackle fires of loads (especially containing Li Batts) – as a result, LithEx or similar extinguishers cannot be fitted in-place of the 2kg Fire Extinguisher.**

If our batteries and/or devices are being moved on our own delivery vehicles and are not in-scope of any exemptions (Vehicles, Small Batteries and Transport with Engineers) they are subject to the full ADR Driver/Vehicle requirements, if they exceed 333kg of batteries per vehicle.

The Full ADR Driver and Vehicle Requirements are in-depth and should be discussed with your DGSA, but generally include:

* Apply Hazardous Placards to their vehicle (if Class 1 or 7, or Sea Freight Journey)
* Apply an Orange Plate Marking to the front and back of the vehicle
* Adhere to Tunnel Code restrictions
* Driver must hold a valid ADR Driver Vocational Training Certificate (ADR License)
* Carry Dangerous Goods Transport Document
* Carry Photo ID
* Carry a set of current Instructions in Writing which are “readily accessible” in the cab.
* Carry ADR Kit:
	+ Wheel Chock (appropriate to vehicle)
	+ Two self-standing warning triangles
	+ High Visibility Vest (for each crew member)
	+ Torch (for each crew member)
	+ Protective gloves (for each crew member)
	+ Goggles (for each crew member)
	+ Fire Extinguishers, appropriate to vehicle size:
		- The Fire Extinguishers must be a Dry Powder type, and they must be in-date, show the last service date, next service date (normally annual services), have a gauge to show that they are full, a pin to prevent accidental activation, an intact break tag to prove that they haven’t been used and they should be held in weather-proof enclosures. These should be readily accessible to the driver without delay.
* Any non-driving crew members must have Dangerous Goods Awareness Training
* The vehicle cannot carry passengers – only trained crew members.

#### External Delivery with Third-Party Carriers

Goods can be consigned to Third-Party Carriers for onward delivery. The Carrier is responsible for the ADR requirements and use of carriage-related exemptions. Product-related exemptions still apply (i.e. Vehicles being exempted and Small Li Batts); in these cases, the goods should be consigned without package marking, labelling or documentation. We will however, as good practice mark each exempted package with the exemption number (i.e. “Not Dangerous Goods in accordance with Special Provision 666” (Vehicles) or “Not Dangerous Goods in accordance with Special Provision 188” (Small Batteries)).

**NOTE:** Whilst this is true for Road Freight, some carriers will transport goods internationally and/or by other modes of transport (i.e. DHL to Scottish Postcodes, Isle of Wight, Northern Ireland, Scottish Isles). If another mode of transport is used, many other requirements may apply and exemptions be removed. Our carriers and destinations have been mapped, and our carriers only use Road Freight domestically within the UK – we do not have any branches off of the UK mainland. Our carrier mapping can be found in [DOCUMENT NUMBER].

Goods which are subject to The ADR requirements (i.e. Large replacement batteries or Large batteries in equipment) will be consigned fully packaged, marked, labelled and documented in accordance with The Regulations (as listed above) and will be prepared by a properly trained member of staff (see below).

The haulier used will always be subject to haulier approval (see above), and their DGSA certificate will be obtained as evidence that they are in compliance with all of these requirements – see the [APPROVED HAULIER LIST].

**NOTE: All of these arrangements can be used for reverse logistics to bring back batteries for disposal – see Recycling Section below.**

**The Small Loads/333kg limits do not apply to Safety Grade C batteries (see below section) – these must always be transported by a full ADR Driver/Vehicle and with prior agreement of The Carrier, if an external carrier is used.**

## Training

In the UK (and internationally) there are mandatory requirements for training to be undertaken for those who have a function in the transport of Li Batts. In addition, clear legal obligations are placed upon the main ‘participants’ in the transport chains who undertake specific functions.

### Function-Specific Obligations

Those functions can be broadly summarised to:

* The Consignor
* The Carrier
* The Consignee

There are various sub-functions which may be undertaken independently, or as part of the functions above, such as Loader, Unloader and Packer. [COMPANY] will be considered the Consignee and Unloader for goods received (i.e. stock purchased) and will be considered the Consignor, Packer and Loader for goods dispatched. The obligations of [COMPANY] are as follows:

As the Consignee and Unloader:

* Obligation not to defer acceptance of the goods without compelling reasons.
* Obligation to verify, after unloading, that the requirements for Dangerous Goods Transport concerning us have been complied with.
* Obligation that if, in the case of a container, this verification brings to light an infringement of the requirements for Dangerous Goods Transport, we shall return the container to the carrier only after the infringement has been remedied.
* Obligation to ensure that the correct goods have been unloaded, by comparing the information on the package, vehicle and container, to the Transport Documents.
* Obligation to check, before and during unloading, that no packagings have been damaged to an extent which would endanger the unloading operation. If this is suspected to be the case, we have the obligation to cease unloading until the situation is rectified and made safe.
* Obligation to comply with all relevant operational requirements for unloading (i.e. removal of placards, cleaning and verifying container/vehicle is made safe to depart).
* Obligation to report any incidents or occurrences on internal systems and make any statutory notification of occurrence reports, if required.

As the Consignor, Packer and Loader:

* Obligation to only handover for carriage consignments which fully meet the relevant transport requirements for Dangerous Goods.
* Obligation to ensure that all goods have been properly classified and identified, as required by the relevant Dangerous Goods Regulations.
* Obligation to provide The Carrier with the required Transport Documents (Dangerous Goods Notes/Declarations) or other information or data in a traceable form, as required for the goods consigned.
* Obligation to use only packagings and large packagings which are approved for the transport of Li Batts (see packaging section above).
* Obligation to comply with all other operational and forwarding requirements (i.e. application of placards, sealing and bracing of containers as required).

### Dangerous Goods Training Program

In order to competently discharge the obligations above, the following three types of training must be completed by all staff members, appropriate to their level of involvement:

#### Dangerous Goods Awareness Training

* + Any personnel who are involved in the procurement, logistics, handling, loading, unloading, storage or logistics of Dangerous Goods.
	+ This should be delivered in line with the UK and International Regulations, by a competent Dangerous Goods instructor.
	+ This training should cover the basic principles of:
		- What are Dangerous Goods?
		- What Dangerous Goods do we receive, handle and consign?
		- What hazards do our specific products present?
		- What are the key obligations for our organisation?
		- How do you ensure the obligations relevant to your job role are complied with?
		- What is the key security information around the storage and dispatch of goods?
		- Where can you find further information?

#### Dangerous Goods Function-Specific Training

* + Must be undertaken specifically for the modes of transport concerned (Air, Road, Sea, Rail or Inland Waterway).
	+ Any personnel who undertake a specific function with regards to Dangerous Goods (i.e. Packers, Loaders, Unloaders, Drivers, Logistics)
	+ This should be delivered in line with the UK and International Regulations by a competent Dangerous Goods instructor.
	+ This training should be designed to build competence commensurate with the personnel’s duties and responsibilities with regards to the transport of Dangerous Goods. For example, personnel who will pack and load Li Batts should undertake training in the following topics:
		- Application of ADR, IMDG and IATA
		- Correct classification and identification of the goods consigned
		- Use of special provisions and packing instructions for Li Batts in differing conditions
		- Use of UN Specification Packaging and proper use of Closing Instructions
		- Dangerous Goods Documentation completion and retention
		- Placarding and Orange Plating of Vehicles
		- Proper application of the Small Load Exemption for Road Transport
		- Completion of Container/Vehicle Packing Certificate for Sea Freight
	+ If the Training is for Sea mode of transport, the IMDG Shoreside Personnel topics must also be covered, if not listed above.
	+ **If the Training is for Air mode of transport, in the UK, this must be delivered by a UK Civil Aviation Authority Approved Training Provider who will be able to produce their certification as evidence and, in addition, must be delivered by a UK Civil Aviation Authority Approved instructor who will be able to produce their certification as evidence.**

#### Dangerous Goods Safety Training

* + Any personnel who may be at risk of injury from the handling of Dangerous Goods.
	+ Must be commensurate with the degree of risk of injury or exposure arising from an incident involving the carriage of dangerous goods, including loading and unloading.
	+ Personnel shall be trained in the hazards and dangers presented by dangerous goods.
	+ Must make personnel aware of the safe handling and emergency response procedures.
	+ At [COMPANY] this will be covered during our routine Health and Safety training programme

***All three types of training above should be refreshed every two years.***

### Training Documentation

All training undertaken shall include a test or verification of understanding which is evidenced, by person.

All training records will be accompanied by a certificate which lists the person’s name, date undertaken, date refresher is due, name and signature of instructor.

All training certificates will be retained for the period or employment or five years’ plus current, whichever is longer.

All training records and certificates will be made available to the employee, competent authority and/or Dangerous Goods Safety Adviser, upon request.

Any new employees who have undertaken previous Dangerous Goods training will be required to provide training records and have these verified; otherwise they will be considered untrained until training has been provided.

## Dangerous Goods Safety Adviser (DGSA)

If an organisation has the ability to consign, pack, load or unload any Dangerous Goods (including Li Batts), it must legally appoint one or more Dangerous Goods Safety Adviser (DGSA).

In the UK, there is a “Small Load Exemption” where this requirement is removed, if 333kg or less of Li Batts are consigned, packed, loaded or unloaded to/from a single vehicle or container. In this case, a DGSA is not legally required to be appointed, although it may still be beneficial to do so.

The Dangerous Goods Safety Adviser(s) are required to hold a Vocational Training Certificate from an ADR Competent Authority (the Department for Transport (DfT) in the UK, issued by the Scottish Qualifications Authority (SQA)).

A DGSA can be an employee or head of the organisation, or an external contractor, provided that they hold the correct qualification.

When appointing a DGSA, their certificate should be obtained and held on file for the period of engagement, plus five years’ following cessation of their engagement.

The DGSA(s), when appointed, shall have the following duties:

Under the responsibility of the head of the organisation, to seek by all appropriate means, and by all appropriate action, within the limits of the relevant activities of that company, to facilitate the conduct of those activities in accordance with the requirements applicable and in the safest possible way.

With regard to the company’s activities, the adviser has the following duties in particular:

* monitoring compliance with the requirements governing the carriage of dangerous goods;
* advising the company on the carriage of dangerous goods;
* preparing an annual report to the management of the company, on the company's activities in the carriage of dangerous goods.

The adviser's duties also include monitoring the following practices and procedures relating to the relevant activities of the company:

* the procedures for compliance with the requirements governing the identification of dangerous goods being transported;
* the company’s practice in taking account, when purchasing means of transport, of any special requirements in connection with the dangerous goods being transported;
* the procedures for checking the equipment used in connection with the carriage, packing, filling, loading or unloading of dangerous goods;
* the proper training of the company’s employees, including on the changes to the regulations, and the maintenance of records of such training;
* the implementation of proper emergency procedures in the event of any accident or incident that may affect safety during the carriage, packing, filling, loading or unloading of dangerous goods;
* investigating and, where appropriate, preparing reports on serious accidents, incidents or serious infringements recorded during the carriage, packing, filling, loading or unloading of dangerous goods;
* the implementation of appropriate measures to avoid the recurrence of accidents, incidents or serious infringements;
* the account taken of the legal prescriptions and special requirements associated with the carriage of dangerous goods in the choice and use of sub-contractors or third parties;
* verification that employees involved in the consigning, carriage, packing, filling, loading or unloading of dangerous goods have detailed operational procedures and instructions;
* the introduction of measures to increase awareness of the risks inherent in the carriage, packing, filling, loading and unloading of dangerous goods;
* the implementation of verification procedures to ensure the presence on board the means of transport of the documents and safety equipment which must accompany transport and the compliance of such documents and equipment with the regulations;
* the implementation of verification procedures to ensure compliance with the requirements governing packing, filling, loading and unloading;
* the existence of the security plan indicated in 1.10.3.2.

**The DGSA’s Annual Report must be held on file by The Company for a minimum of five years’ and must be made available to the Competent Authority upon request.**

### Our Appointed DGSA is:

**NAME:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**COMPANY: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Email: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Telephone: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**DGSA Certificate Number: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

Damaged Goods

If Damaged Goods are received in a delivery from a supplier, these should be immediately isolated and stored in a safe location (i.e. outside).

A Battery Safety Assessment should be conducted by an engineer (see Appendix A and Appendix B). No damaged batteries shall be returned to a supplier, unless they are consigned in accordance with the Battery Disposals procedure (see below) for the supplier to dispose of.

## References – UK Regulations

Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 (as amended): Great Britain -<https://www.gov.uk/government/publications/restriction-of-hazardous-substances-rohs-regulations/restriction-of-the-use-of-certain-hazardous-substances-in-electrical-and-electronic-equipment-regulations-2012-as-amended-great-britain>

Regulations affecting batteries placed on the UK market guidance document - <https://www.gov.uk/guidance/batteries>

## References – Other Regulations

EU Battery and Waste Battery Regulations 2023 - <https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023R1542>

UK Civil Aviation Authority Dangerous Goods Training Requirements: <https://www.caa.co.uk/commercial-industry/airlines/dangerous-goods/dangerous-goods-training-requirements/>

United Nations Manual of Tests and Criteria: <https://unece.org/transport/standards/transport/dangerous-goods/un-manual-tests-and-criteria-rev8-2023>

## References – Transport via Road/Rail

ADR (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

RID (Regulations Concerning the International Carriage of Dangerous Goods by Rail)

## References – Transport via Sea Freight/Inland Waterway

IMO (International Maritime Organization)

## References – Transport by Air Freight

IATA Li Batt Guidance Document: <https://www.iata.org/contentassets/05e6d8742b0047259bf3a700bc9d42b9/lithium-battery-guidance-document.pdf>

IATA DGR (IATA Dangerous Goods Regulations): <https://www.iata.org/en/publications/dgr/>

## Specialist Packaging

Examples include:

[Lithium Battery-specific Zarges cases](https://www.zargescases.co.uk/2022/01/transporting-lithium-ion-batteries/)

[Recyclus LiBox (ADR P911)](https://www.recyclusgroup.com/battery-recycling-copy)

# SALES & AFTER-CARE CHECKLIST: Distributor/Retailer → Consumer

To ensure the safe handling, storage, and disposal of assistive technology products that contain Li Batts, [COMPANY] covers the following issues with Consumers during sales, orientation, and aftercare. [**NB:** For more information, see companion document ‘[BHTA Lithium Battery Safety Guidance for Retailers and Consumers](https://www.bhta.com/lithium-battery-safety-guidance/)*’*; copies available upon request.]

## Battery Charging Instructions

E.g.: Explain the proper charging procedure for the Li Batt. Advise the customer to use the provided charger and avoid using aftermarket or incompatible chargers. Emphasise the importance of not overcharging the battery to prevent damage.

## Initial Charging

E.g.: Instruct the customer on how to cycle the battery before their first use. Be very clear about the safety and lifecycle implications of proper Depth of Discharge (DoD) practices with Li Batts.

## Charging Frequency

E.g.: Instruct the customer how to cycle the battery during ongoing use, especially in regard to allowing the battery to drain completely before recharging. Be very clear about the safety and lifecycle implications of proper Depth of Discharge (DoD) practices with Li Batts (i.e. frequency of charge).

## Storage Recommendations

EG: Explain the best practices for storing the mobility scooter when not in use for an extended period. Li Batts should be stored in a cool and dry place, ideally at a 40-60% charge level.

## Temperature Considerations

E.g.: Inform the customer about the safety and lifespan effects of extreme temperatures on Li Batts (e.g. avoiding exposing the battery to excessive heat or cold, as it can impact performance and longevity).

## Battery Maintenance

E.g.: Discuss essential Li Batt maintenance regimes, e.g. keeping the battery and the device it powers clean; how to inspect battery terminals for any signs of corrosion; and how to monitor battery performance.

## Charging Safety Precautions

E.g.: Advise the customer never to leave a Li Batt device charging unattended for long periods and to avoid charging devices overnight or otherwise in periods of inattentiveness.

## Battery Life Expectancy

E.g.: Set clear, realistic expectations about the approximate lifespan of the Li Batt and factors that can affect its longevity, such as usage patterns and charging habits.

## Weight Limitations

E.g.: Ensure the customer is aware of the weight capacity of the device and how exceeding it can impact battery performance and overall functionality and safety.

## Warranty Coverage

E.g.: Clearly explain the warranty coverage for the device and its Li Batts, including any specific warranty terms related to battery replacement.

## Recycling and Disposal

E.g.: Instruct the customer to return old or damaged Li Batts to an appropriate take-back scheme or approved electronic waste handler retailer for proper recycling and disposal, highlighting the special concerns around proper Li Batt handling.

## User Manual and Safety Guidelines

E.g.: Show the customer the part of the device user manual that includes specific instructions for the device and its Li Batt – or, better, provide them with a standalone excerpt/precis of device-specific Li Batt practices – and emphasise the importance of following safety guidelines at all times. At a minimum, emphasise the following to consumers:

* Never fit Li Batts to a device that was not specifically designed to be powered by Li Batts – avoid “after-market” conversion products and services and follow all manufacturer instructions.
* Only buy Li Batt-powered devices, chargers, and batteries from reputable retailers; register your product with the manufacturer and check the product isn’t subject to a product recall.
* Always use the manufacturer-approved charger for the product, and, if you spot any signs of wear and tear or damage, buy an official replacement charger for your product from a reputable seller.
* Do not charge batteries or store your device near combustible or flammable materials.
* Avoid storing mobility scooters or powerchairs on escape routes or in communal areas of multi-occupancy buildings; if there is a fire, it can affect people’s ability to escape.
* Never leave your device charging overnight or when you are away from the property – always keep it in sight.
* Make sure you charge your device in a well-ventilated area and do not cover the battery.
* When charging, always follow the manufacturer’s instructions.
* Always unplug your charger when it is finished charging.
* Ensure you have working smoke alarms, especially in the area where you are charging your Li Batt.

## Troubleshooting and Warning Signs

E.g.: Inform the customer about common Li Batt-related issues they might encounter and the steps they can take to troubleshoot and resolve them, advising on how/when to seek professional assistance. At a minimum, emphasise the following to consumers:

* Be alert to the things can damage a Li Batt, and could lead to damage, malfunction or failure, including overcharging, overheating, penetration of the physical battery casing, repeated underperformance or rapid draining, crushing forces that damage the physical battery casing, and signs of short circuit.
* Critical warning signs of Li Batt failure, including the battery appearing to bulge or swell, discharging too fast, and/or being hot to the touch.
* If a Li Batt overheats, hisses, or bulges, immediately move the device with the battery away from flammable materials and place it on a non-combustible surface; if it is safe to do so, put the device and battery safely outdoors to burn out.
* In the event of a Li Batt fire, NEVER attempt to tackle it yourself; it is important to remember water isn’t effective at extinguishing a Li Batt fire and can actually make it worse – Get Out, Stay Out, Call 999.

## Customer Support

E.g.: Let the customer know all their support options – retailer, device manufacturer, battery manufacturer – including contact details, for questions, concerns, or assistance related to the device and its Li Batt.

# RECYCLING CHECKLIST: Manufacturer/Distributor/Retailer ← Consumer

UK law and regulation mandate take-back/recycling schemes for batteries, including Li Batts, per [OPSS/DEFRA guidance](https://www.gov.uk/guidance/regulations-batteries-and-waste-batteries):

* “The ***manufacturer or importer*** that first places batteries on the UK market – including those in products – ***is classed as the producer and is therefore responsible for compliance*** if the business has a UK presence.
* ***“The only exception is the collection of portable batteries[[1]](#footnote-2) – UK distributors and retailers that sell or supply more than 32kg of batteries a year must provide a take back service.*** The guiding principles of [UK battery waste compliance] are that all waste batteries are processed by an Approved Battery Treatment Operator (ABTO) or an Approved Battery Exporter (ABE) and that producers pay for their collection, treatment and recycling. Distributors and retailers [per [specific guidance](https://www.gov.uk/battery-waste-supplier-reponsibilities)] that sell or supply more than 32kg of batteries a year must participate in the take back scheme. This involves providing a free collection point for waste portable batteries at their premises and arranging their transport to an ABTO or ABE, usually through a Battery Compliance Scheme.”

Successful Consumer participation in these schemes requires cooperation and collaboration between Manufacturers and Distributors/Retailers, as well as clear instructions to Consumers.

The following sets out the policies and procedures that [COMPANY and ITS PARTNERS] have in place to help Consumers safely recycle Li Batts.

## Safe Preparation

Our organisation’s activities can generate Li Batt wastes in the following ways:

* Old devices, being disposed of by The Manufacturer or Distributor for disposal, as part of the sale of a new device.
* Warranty Batteries and Devices, or Damaged Deliveries, returned to the manufacturer or distributor for disposal.
* End-of-Life Batteries and Devices, returned to the manufacturer or distributor for disposal.

In all cases, any batteries will undergo a Battery Safety Assessment conducted by a suitably qualified and experienced engineer and be given a safety score from A-C (decision tree in Appendix A) and this will be documented in a Battery Safety Assessment Form (see Appendix B).

## Grade A Battery Transport for Recycling

If batteries, from The Battery Safety Assessment, are Graded “A”, they should be transported, as they would be packaged, marked, labelled and documented, as they are delivered new.

* For vehicles (see definition in previous section), the battery will remain in the vehicle, and it will be transported as non-Dangerous Goods with no Marking/Labelling or Documentation.
* For equipment or batteries alone, these will be transported in the same way in which they are packed, marked, labelled and documented, when new – now following P909. In addition, each container shall be marked with:
	+ "LITHIUM BATTERIES FOR DISPOSAL" or "LITHIUM BATTERIES FOR RECYCLING".
	+ **Special Provision 188 for Small Batteries does not apply in this case** – these must be moved in accordance with P909, as for Large Batteries (see prior section).
	+ P909 Summary:
		- If the battery is >100wh for Lithium Ion Batteries or >2g of Lithium for Lithium Metal batteries (lower limits if only moving cells).
			* Must be packed in UN Specification Packagings of types 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2, 3A2, 3B2, 3H2, provided that they are approved for the carriage of Li Batts – obtain the UN Specification Certificate and Closing Instructions to verify.
			* Packagings shall conform to the packing group II performance level.
		- If the battery is <100wh for Lithium Ion Batteries or <2g of Lithium for Lithium Metal batteries (lower limits if only moving cells).
			* Any good-quality packaging can be used, provided that they are appropriate for the size and weight of the goods.
			* Packages cannot exceed 30kg Gross Weight.
		- For cells and batteries, when fitted to equipment, they can be shipped in any good-quality suitable packaging, on pallets or unpackaged, provided that they are afforded equivalent protection by being enclosed by the equipment.
		- For any battery that weighs over 12kg, which is enclosed in a strong impact-resistant outer casing, any good quality suitable packaging is allowed.
		- NOTE: All batteries above must be packed to prevent movement during carriage and packed or designed to prevent short circuits, and the dangerous evolution of heat. This can include:
			* Individual protection/insulation of the battery terminals.
			* Individual inner packaging of batteries to prevent contact between them.
			* Use of insulating, non-conductive, non-combustible cushioning between batteries (i.e. Vermiculite).
	+ A pre-marked and labelled package will be provided to the delivery driver, engineer or consumer for packing and later collection. This will be in compliance with the above requirements and users will be given clear instructions on how to properly use the packaging. A Dangerous Goods Transport Document will be provided to the collecting driver.

## Grade B Battery Transport for Recycling

* For vehicles (see definition in previous section), the battery will remain in the vehicle, and it will be transported as non-Dangerous Goods with no Marking/Labelling or Documentation.
* For equipment or batteries alone, these will be transported in the same way in which they are packed, marked, labelled and documented, when new. In addition, each container shall be marked with:
	+ "DAMAGED/DEFECTIVE LITHIUM ION BATTERIES" or "DAMAGED/DEFECTIVE LITHIUM METAL BATTERIES".
	+ **Special Provision 188 for Small Batteries does not apply in this case – these must be moved in accordance with P908, as for Large Batteries (see prior section).**
	+ Summary of P908:
		- * All batteries and equipment containing batteries must be packed in UN Specification Packagings of types 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2, 3A2, 3B2, 3H2, provided that they are approved for the carriage of Li Batts – obtain the UN Specification Certificate and Closing Instructions to verify.
			* Packagings shall conform to the packing group II performance level.
			* Packaging must be leak-proof.
			* Metal packagings shall be fitted with an electrically non-conductive lining material (e.g. plastics) of adequate strength for the intended use.
			* Inner packaging of batteries to prevent contact between them must be used.
			* All batteries above must be packed tightly to minimise the effects of vibration during transport and to prevent movement during carriage and packed or designed to prevent short circuits and the dangerous evolution of heat.
				+ Use of insulating, non-conductive, non-combustible cushioning between batteries (i.e. Vermiculite).
			* A cell or battery with a net mass of more than 30kg shall be limited to one cell or battery per outer packaging.
	+ A pre-marked and labelled package will be provided to the delivery driver, engineer or consumer for packing and later collection. This will be in compliance with the above requirements and users will be given clear instructions on how to properly use the packaging. A Dangerous Goods Transport Document will be provided to the collecting driver.

## Grade C Battery Transport for Recycling

* For vehicles, batteries should be removed from the vehicle, and will be carried in accordance with the below.
* For equipment or batteries alone, these will be transported in specialist packaging which has been tested and approved for ADR P911. In addition, each container shall be marked with:
	+ "DAMAGED/DEFECTIVE LITHIUM ION BATTERIES" or "DAMAGED/DEFECTIVE LITHIUM METAL BATTERIES".
	+ **Special Provision 188 for Small Batteries does not apply in this case – these must be moved in accordance with P911, as for Large Batteries (see prior section).**
	+ **Summary of P911:**
		- All batteries and equipment containing batteries must be packed in UN Specification Packagings of types 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2, 3A2, 3B2, 3H2, provided that they are approved for the carriage of Li Batts – obtain the UN Specification Certificate and Closing Instructions to verify.
		- Packagings shall conform to the packing group I performance level.
		- All batteries must be packed to prevent short circuits.
		- The packaging shall be capable of meeting the following additional performance requirements in case of rapid disassembly, dangerous reaction, production of a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours of the cells or batteries:
			* The outside surface temperature of the completed package shall not have a temperature of more than 100°C. A momentary spike in temperature up to 200 °C is acceptable;
			* No flame shall occur outside the package;
			* No projectiles shall exit the package;
			* The structural integrity of the package shall be maintained;
			* The packagings shall have a gas management system (e.g. filter system, air circulation, containment for gas, gas tight packaging etc.), as appropriate.
		- A verification report shall be available on request. As a minimum requirement, the cell or battery name, the cell or battery number, the mass, type, energy content of the cells or batteries, the packaging identification and the test data according to the verification method as specified by the competent authority shall be listed in the verification report.
	+ **An ADR Driver will always be required.**
	+ **You must have a Dangerous Goods Safety Adviser appointed prior to packing, consigning or transporting any Grade C batteries.**
	+ A pre-marked and labelled package will be provided to the delivery driver, engineer or consumer for packing and later collection. A Dangerous Goods Transport Document will be provided to the collecting driver.

## Duty of Care Consignment Notes and Registered Waste Carrier

If you are the producer/holder or carrier of waste you may need to register for a Waste Carrier’s License, or produce a Duty of Care Consignment Note. This requirement varies depending on your exact arrangements for carrying batteries/devices for disposal.

You should discuss this with your Battery Disposal Partner, and guidance is given here: <https://www.gov.uk/register-renew-waste-carrier-broker-dealer-england>

## Final Disposal Partners

Our approved final disposal partners are:

Company Name:

Address:

Contact:

Types of Batteries Accepted: Li Metal / Li Ion / Defective / Dangerous (P911)

Documents on file:

* Waste Carrier’s License Copy (Number: \_\_\_\_\_\_\_\_\_\_\_\_\_ Exp. Date: \_\_\_\_\_)
* Dangerous Goods Safety Adviser Certificate: (Number: \_\_\_\_\_\_\_\_\_\_\_\_\_ Exp. Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_)

Company Name:

Address:

Contact:

Types of Batteries Accepted: Li Metal / Li Ion / Defective / Dangerous (P911)

Documents on file:

* Waste Carrier’s License Copy (Number: \_\_\_\_\_\_\_\_\_\_\_\_\_ Exp. Date: \_\_\_\_\_)
* Dangerous Goods Safety Adviser Certificate: (Number: \_\_\_\_\_\_\_\_\_\_\_\_\_ Exp. Date: \_\_\_\_\_\_\_\_\_\_\_\_\_\_)

## References

ADR (European Agreement Concerning the International Carriage of Dangerous Goods by Road)

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2009

Waste Carrier’s License - <https://www.gov.uk/register-renew-waste-carrier-broker-dealer-england>

## Specialist Packaging

Examples include:

[Lithium Battery-specific Zarges cases](https://www.zargescases.co.uk/2022/01/transporting-lithium-ion-batteries/)

[Recyclus LiBox (ADR P911)](https://www.recyclusgroup.com/battery-recycling-copy)

# TEMPLATE: Manufacturer/Distributor/Retailer – Li Battery Disposal Process

The following sets out the processes and procedures that [COMPANY and ITS PARTNERS] have in place to dispose of Li Batts safely and responsibly at the end of their useful life.

## Objective(s)

What are the legal obligations in the UK with regard to Li Batts:

End-of-life disposal (e.g take-back schemes, recycling, etc.).

What are the must-meet criteria – beyond UK legal obligations – for the end-of-life disposal of Li Batts at [COMPANY].

In what instances might [COMPANY’S] must-meet criteria be superseded (e.g. by local regulatory requirements, insurance requests, etc.).

## Scope

To which [FACILITIES, BUSINESS UNITS, COUNTRIES, etc.] does this policy apply.

In the [COUNTRIES, REGIONS, MARKETS, etc.] in which [COMPANY] operates, how are Li Batts classified.

In what circumstances are Li Batts encountered at [COMPANY], e.g.:

* Li-ion batteries sold on their own.
* Li-ion batteries packed separately with other product(s).
* Li-ion batteries in assembled product(s).

## Definitions

What kind(s) of Li Batts does [COMPANY] use:

* Lithium Metal
* Lithium Ion
* Other, specific types/combinations, if applicable, e.g. Lithium Iron Phosphate; Lithium Cobalt Oxide (small electronics); Lithium Manganese Oxide (portable power tools, medical instruments, some hybrid/electric vehicles); Lithium Nickel Manganese Cobalt Oxide (portable power tools, e-bikes, some scooters)

## References

Internal [COMPANY] References

* *Give Reference to Company Product Lists or Technical Data that shows which Li Batts are transported and in what form (as above).*

## Risk Assessment

Risk assessment (general) – How do Li Batts fit into [COMPANY’S] overall risk assessment(s).

Risk assessment (specific) – What additional risk assessment is required at [COMPANY] in regard to Li Batts.

## Procedures – List View

At [COMPANY], the following procedures apply to Li Batt end-of-life disposal:

* Protective Measures – Storage [e.g. vermiculite]
* Protective Measures – Structural Fire Prevention [e.g. fire-resistant/separated rooms/areas; spacing]
* Protective Measures – Organisational [e.g. rejection/disposal of damaged batteries]
* Incoming Material – Used Batteries [e.g. take-back schemes]
* Outgoing Material – Transport [e.g. own-vehicle or partner-vehicle]
* Outgoing Material – Disposal/Recycling Partner(s)
* Staff Training

## Procedures – Workflow View

Graphically, [COMPANY’S] Li Batt end-of-life disposal procedures look like:



# APPENDIX A – Battery Safety Assessment Decision Tree



# APPENDIX B – Li Batt Safety Assessment Form Template

|  |
| --- |
| **Battery Safety Assessment Form** |
| **Date of Assessment:** |  | **Customer Name/Number:** |  |
| **Intended Transport Date:** |  | **Intended Transport Method/Carrier:** |  |
| **Intended Destination:** |  | **Intended Container ID and Location of Verification Report (if Grade C only):** |  |
| **Battery Type:** | Li Ion / Li Metal | **Battery Form:** | In-Device / With Device / Loose |
| **Battery Size:***Li Ion (Wh)**Li Metal (g)* |  | **Battery Model:** |  |
| **Reason for Movement:** |  |
| **History of Battery:**(if known) |  |
| **Battery Safety Grade:** | A / B / C | **Comments on Safety Grade:**(optional) |  |
| *I am satisfied that I have received all requested information/images/evidence to confidently conduct a Battery Safety Assessment and establish a Battery Safety Grade (as shown above).* *I cannot give any confirmation that the battery is safe or in good condition, however from the information available, I have determined a Battery Safety Grade in good faith, in accordance with the United Nations guidance, to the best of my knowledge.* *Any Lithium Battery can enter thermal runaway and all appropriate precautions and arrangements should be made for this; despite the safety grade I have assigned above.* |
| **Engineer Name:** |  | **Engineer Sign:** |  |
| ***Caution!****In accordance with the Battery Safety Grade (above) there are different preparation, packaging, marking, labelling, documentation and driver requirements. These must all be adhered to and completed,* ***prior*** *to transport. For more information, see your company’s Lithium Battery Transport Policy, or speak to your Dangerous Goods Safety Adviser.* |

# APPENDIX C – Document Retention Schedule

|  |  |  |  |
| --- | --- | --- | --- |
| **Document** | **Minimum Retention Period** | **Retention Location** | **Responsible Owner** |
| UN38.3 Test Certificates | Duration of product supply, plus ten years’ | Product Compliance Files | Quality Team |
| Product Safety Documentation and User Manuals | Duration of product supply, plus ten years’ | Product Compliance Files | Quality Team |
| UN38.3 Test Reports | Duration of product supply, plus ten years’ | Product Compliance Files | Quality Team |
| Records of Dangerous Goods Consigned | Twelve months following date of shipping | Warehouse Management System (WMS) | IT/Systems Team |
| Dangerous Goods Transport Documents | Three months following shipment date | Despatch Sharepoint | Despatch Team Leader |
| DGSA Reports | Five years from report date | Compliance Team Sharepoint | Compliance Manager |
| Dangerous Goods Training Records | One year following expiry or end of employment, whichever is soonest | Personnel Files | HR Team |
| Hazardous Waste Consignment Notes | Three years from collection date | Facilities Sharepoint | Facilities Manager |
| Battery Safety Assessment Forms | One year following disposal | Engineering Sharepoint | Engineering Manager |
| UN Specification Packaging Closing Instructions and UN Specification Certificates | Duration of use, plus one year | Compliance Team Sharepoint | Compliance Manager |
| Grade C / P911 Battery Packaging Verification Reports | Duration of use, plus one year | Compliance Team Sharepoint | Compliance Manager |

1. Defined as “a battery or battery pack [that]:

Is sealed

Is not an automotive or industrial battery

Can be hand-carried by an average natural person without difficulty” [↑](#footnote-ref-2)