
Transport of lithium ion batteries is in the scope of Dangerous Goods Transport Regulations. Therefore many specific requirements have to be respected for their transport. The safe carriage of dangerous goods is important to shippers and transport companies and not least for every party involved in the chain of lithium ion battery transport.

The following notes, based on recommendations of EPTA and ZVEI, have been produced to provide initial practical guidance to the regulations for the carriage of lithium ion batteries especially for cordless power tools and gardening equipment.

These provisions must be fulfilled by the shipper for every commercial shipment of lithium ion batteries.

Especially the energy content and diverse conditions classify which dangerous goods regulations must be taken into account for the transport of lithium ion batteries. Due to exemption regulations, simplified requirements apply for instance to lithium ion batteries with an energy content up to maximum 100 Wh. Whereas lithium ion batteries with an energy content of more than 100 Wh are always to be treated as fully regulated Class 9 Dangerous Goods.

This guidance refers to the commercial transport by
• road/rail (ADR/RID)
• sea freight (IMDG Code)
• air freight (IATA)

Lithium ion batteries are classified as follows:
• UN3480 Lithium ion batteries
• UN3481 Lithium ion batteries contained in equipment
• UN3481 Lithium ion batteries packed with equipment

In individual cases, a dangerous goods expert should be consulted.

This document represents the status as of 01. February 2019. Local authorities are responsible for the interpretation and implementation of the relevant regulations.

They can, at their discretion, make decisions differing from this guideline. Therefore, despite the greatest possible care during the revision and composition, no liability can be assumed for the content and the completeness of this document.

Legend

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR</td>
<td>Accord européen relatif au transport international des marchandises Dangereuses par Route, (European Agreement concerning the International Carriage of Dangerous Goods by Road)</td>
</tr>
<tr>
<td>RID</td>
<td>Règlement concernant le transport International ferroviaire de marchandises Dangereuses (Regulations concerning the International Carriage of Dangerous Goods by Rail)</td>
</tr>
<tr>
<td>IMDG Code</td>
<td>International Maritime Code for Dangerous Goods</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>PI</td>
<td>Packing Instruction</td>
</tr>
<tr>
<td>SP</td>
<td>Special Provision</td>
</tr>
<tr>
<td>n/a</td>
<td>not applicable</td>
</tr>
</tbody>
</table>
Flow chart to determine the appropriate Packing Instruction

Battery to be shipped

Battery UN tested?

Battery defective / damaged? (p. 8)

Battery “critical”? (p. 8)

yes or no

Battery for disposal or recycling?

Energy ≤ 100 Wh*?

Transport by airfreight?

Energy > 100 Wh*?

Transport by airfreight?

*Energy [Wh] = Capacity [Ah] x Voltage [V] (see name plate)

yes

no

yes

ja

no

yes

Shipment under SP 310, P910 (p. 7)

Transport only with approval from Competent Authority (p. 8); contact manufacturer

Shipment under SP 376, P908 (p. 8)

Shipment under SP 377, P909 (p. 9); contact local collection point for batteries or a recycler

Shipment under PI 965 Section IB, II, PI 966 Section II, PI 967 Section II (p. 5)

“exempted” dangerous goods; shipment under SP 188 (p. 3)

Shipment under PI 965 Section IA, PI 966 Section I, PI 967 Section I (p. 6)

“fully regulated” dangerous goods shipment under P903 (p. 4)
<table>
<thead>
<tr>
<th>Transportation Mode</th>
<th><strong>Road/Rail (ADR/RID), Sea Freight (IMDG Code)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>≤ 100 Wh (per battery)</strong></td>
</tr>
<tr>
<td>Batteries (without equipment)</td>
<td>Batteries packed with equipment ¹) (at least one battery which is not attached to tool)</td>
</tr>
<tr>
<td><img src="image1" alt="Image" /></td>
<td><img src="image2" alt="Image" /></td>
</tr>
</tbody>
</table>

### Packing Instructions
- ADR/RID SP188, IMDG Code SP188

### Max. Quantity
- n/a

### Weight Limit
- 30 kg gross weight per package
- n/a

### Packaging
- Batteries must be placed in inner packagings that completely enclose the battery, batteries must be protected so as to prevent short circuits.
- Strong outer packaging, e.g. fibreboard box (drop test passed: content shall not be damaged or shifted)

### Marking
- Lithium battery mark
  - UN 3480
  - Tel. ____________
- Lithium battery mark
  - UN 3481
  - Tel. ____________

### Sea Freight Container-Marking
- none

### Transport Document
- n/a
- n/a

### Miscellaneous
- Personnel shall be trained commensurate with responsibilities

¹) Equipment means apparatus for which the lithium cells or batteries will provide electrical power for its operation.
<table>
<thead>
<tr>
<th>Transportation Mode</th>
<th>Road/Rail (ADR/RID), Sea Freight (IMDG Code)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 100 Wh (per battery)</td>
<td>Batteries (without equipment)  &lt;br&gt; Batteries packed with equipment (at least one battery which is not attached to tool)  &lt;br&gt; Batteries contained in equipment (contained/plugged-in in tool)</td>
</tr>
<tr>
<td><strong>Packing Instructions</strong></td>
<td>P903, LP903</td>
</tr>
<tr>
<td><strong>Max. Quantity</strong></td>
<td>333 kg per transport unit (truck incl. trailer) for exemptions according to ADR 1.1.3.6</td>
</tr>
<tr>
<td><strong>Weight Limit</strong></td>
<td>n/a</td>
</tr>
<tr>
<td><strong>Packaging</strong></td>
<td>Batteries must be placed in inner packagings that completely enclose the battery, batteries must be protected to prevent short circuits. Batteries must be secured against movement within the outer packaging. UN approved packaging (Packing Group II: e.g. UN/4G/Y30/…).</td>
</tr>
<tr>
<td><strong>Marking</strong></td>
<td>Hazard label № 9A (10x10 cm)  &lt;br&gt; ADR: UN 3480  &lt;br&gt; IMDG Code: UN 3480 LITHIUM ION BATTERIES  &lt;br&gt; Hazard label № 9A (10x10 cm)  &lt;br&gt; ADR: UN 3481  &lt;br&gt; IMDG Code: UN 3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT or UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT</td>
</tr>
<tr>
<td><strong>Sea Freight Container-Marking</strong></td>
<td>CONTAINER-PLACARDS (min. 25x25 cm)</td>
</tr>
<tr>
<td><strong>Transport Document</strong></td>
<td>UN 3480, LITHIUM ION BATTERIES, 9, (E)  &lt;br&gt; Number of packages and packaging type (e.g. 1 Fibreboard box)  Battery weight (e.g. xx kg), Shipper &amp; consignee’s address  Sea freight (IMDG Code): (language English) IMO-DANGEROUS GOODS DECLARATION (SOLAS 74, KAP. VII, REG 5, MARPOL 73/79, ANNEX III REG. 4 OF IMDG-CODE)  &lt;br&gt; UN 3481, LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, 9, (E)  &lt;br&gt; Number of packages and packaging type (e.g. 1 Fibreboard box)  Battery weight (e.g. xx kg), Shipper &amp; consignee’s address  Sea freight (IMDG Code): (language English) IMO-DANGEROUS GOODS DECLARATION (SOLAS 74, KAP. VII, REG 5, MARPOL 73/79, ANNEX III REG. 4 OF IMDG-CODE)  &lt;br&gt; UN 3481, LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, 9, (E)  &lt;br&gt; Number of packages and packaging type (e.g. 1 Fibreboard box)  Battery weight (e.g. xx kg), Shipper &amp; consignee’s address  Sea freight (IMDG Code): (language English) IMO-DANGEROUS GOODS DECLARATION (SOLAS 74, KAP. VII, REG 5, MARPOL 73/79, ANNEX III REG. 4 OF IMDG-CODE)  &lt;br&gt; UN 3481, LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, 9, (E)  &lt;br&gt; Number of packages and packaging type (e.g. 1 Fibreboard box)  Battery weight (e.g. xx kg), Shipper &amp; consignee’s address  Sea freight (IMDG Code): (language English) IMO-DANGEROUS GOODS DECLARATION (SOLAS 74, KAP. VII, REG 5, MARPOL 73/79, ANNEX III REG. 4 OF IMDG-CODE)</td>
</tr>
<tr>
<td><strong>Miscellaneous</strong></td>
<td>Personnel shall be trained commensurate with responsibilities</td>
</tr>
<tr>
<td>Transportation Mode</td>
<td>Airfreight (IATA)</td>
</tr>
<tr>
<td>---------------------</td>
<td>------------------</td>
</tr>
<tr>
<td><strong>≤ 100 Wh (per battery)</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Batteries** (without equipment)

**Batteries packed with equipment**<sup>1)</sup> (at least one battery which is not attached to tool)

**Batteries contained in equipment**<sup>1)</sup> (contained/plugged-in in tool)

### Packing Instructions

<table>
<thead>
<tr>
<th></th>
<th>IATA PI 965 Section IB</th>
<th>IATA PI 965 Section II</th>
<th>IATA PI 966 Section II</th>
<th>IATA PI 967 Section II</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Quantity</td>
<td>none (more than 2 batteries per package)</td>
<td>2 batteries per package, 1 package per consignment, 1 package per overpack</td>
<td>As required for operation, plus 2 for replacement</td>
<td>n/a</td>
</tr>
<tr>
<td>Weight Limit</td>
<td>PAX: forbidden, CAO: 10 kg net battery weight per package</td>
<td>PAX: forbidden, CAO: n/a</td>
<td>PAX/CAO: 5 kg net battery weight per package</td>
<td></td>
</tr>
</tbody>
</table>

### Packaging

- Batteries must be placed in inner packaging that completely encloses the battery, batteries must be protected to prevent short circuits (only for batteries or batteries packed with equipment)
- Batteries must be secured against movement within the outer packaging
- Equipment containing batteries must be secured and packed to prevent unintended operation during transport
- Strong outer packaging (fibreboard box)

### Marking

- UN 3480, Lithium ion batteries, battery weight (e.g. net qty xx kg)
- Shipper’s/Consignee’s address

![UN 3480](image)

### Transport Document

- Shipper’s Declaration for Dangerous Goods: UN 3480 Lithium ion batteries, 9, // __ Fibreboard box(es) x __ kg // 965 // II, see Example 1, delete the "PASSENGER AND CARGO AIRCRAFT" box
- n/a
- n/a
- n/a

### Information on the Air Waybill (AWB)

- In the "Handling Information" box: "Dangerous Goods as per Shipper’s Declaration CAO"
- In the "Nature and Quantity of Goods" box: "Lithium ion batteries in compliance with section II of PI 965 CAO", see Example 2
- In the "Nature and Quantity of Goods" box: "Lithium ion batteries in compliance with section II of PI 966"
- Only if more than 2 batteries per package, in the "Nature and Quantity of Goods" box: "Lithium ion batteries in compliance with section II of PI 967"

### Miscellaneous

- Official IATA Training by authorized trainer required, If not available, please contact IATA authorized expert
- Batteries <2.7 Wh: Max. Quantity 2.5 kg
- Adequate instruction commensurate with responsibilities
- State of charge (SoC) must not exceed 30%

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<sup>1</sup>) Equipment means apparatus for which the lithium cells or batteries will provide electrical power for its operation.
### Transportation Mode

<table>
<thead>
<tr>
<th>Airfreight (IATA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt; 100 Wh (per battery)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Batteries</th>
<th>Batteries packed with equipment</th>
<th>Batteries contained in equipment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(without equipment)</td>
<td>(at least one battery which is not attached to tool)</td>
<td>(contained/plugged-in in tool)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Packing Instruction</th>
<th>IATA PI 965 Section IA</th>
<th>IATA PI 966 Section I</th>
<th>IATA PI 967 Section I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. Quantity</td>
<td>n/a</td>
<td>As required for operation, plus 2 for replacement</td>
<td>n/a</td>
</tr>
<tr>
<td>Weight Limit</td>
<td>PAX: forbidden</td>
<td>PAX: 5 kg net battery weight per package</td>
<td>PAX: 35 kg net battery weight per package</td>
</tr>
<tr>
<td>Packaging</td>
<td>Batteries must be placed in inner packagings that completely enclose the battery, batteries must be protected to prevent short circuits</td>
<td>Batteries must be placed in inner packagings that completely enclose the battery, batteries must be protected so as to prevent short circuits</td>
<td>Equipment containing batteries must be secured and packed to prevent accidental operation during transport</td>
</tr>
<tr>
<td></td>
<td>UN approved packaging (Packing Group II: e.g. UN 4G/Y30/.../PAX: 35 kg net battery weight per package)</td>
<td>UN approved packaging (Packing Group II: e.g. UN 4G/Y30/.../PAX: 35 kg net battery weight per package)</td>
<td>Batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging.</td>
</tr>
<tr>
<td></td>
<td>Strong outer packaging (e.g. cardboard box)</td>
<td>Strong outer packaging (e.g. cardboard box)</td>
<td>Strong outer packaging (e.g. cardboard box)</td>
</tr>
<tr>
<td></td>
<td>UN approved packaging not required (SP A48)</td>
<td>UN approved packaging not required (SP A48)</td>
<td>UN approved packaging not required (SP A48)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Marking</th>
<th>UN 3480, Lithium ion batteries Net weight (NET QTY) Shipper’s/Consignee’s address</th>
<th>UN 3481, Lithium ion batteries packed with equipment Net weight (NET QTY) Shipper’s/Consignee’s address</th>
<th>UN 3481, Lithium ion batteries contained in equipment Net weight (NET QTY) Shipper’s/Consignee’s address</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transport Document</td>
<td>Shipper’s Declaration for Dangerous Goods: UN 3480 Lithium ion batteries, 9 // 965, delete the “PASSENGER AND CARGO AIRCRAFT” box</td>
<td>Shipper’s Declaration for Dangerous Goods: UN 3481 Lithium ion batteries packed with equipment, 9 // 966</td>
<td>Shipper’s Declaration for Dangerous Goods: UN 3481 Lithium ion batteries contained in equipment, 9 // 967</td>
</tr>
<tr>
<td>Information on the Air Waybill (AWB)</td>
<td>In the “Handling Information” box: “Dangerous Goods as per Shipper’s Declaration CAO”</td>
<td>In the “Handling Information” box: “Dangerous Goods as per Shipper’s Declaration” , see Example 3</td>
<td>In the “Handling Information” box: “Dangerous Goods as per Shipper’s Declaration” , see Example 3</td>
</tr>
<tr>
<td>When a shipment contains both dangerous goods and non-dangerous goods, the number of packages containing dangerous goods shall be added in the “Handling Information” box.</td>
<td>When a shipment contains both dangerous goods and non-dangerous goods, the number of packages containing dangerous goods shall be added in the “Handling Information” box.</td>
<td>When a shipment contains both dangerous goods and non-dangerous goods, the number of packages containing dangerous goods shall be added in the “Handling Information” box.</td>
<td>When a shipment contains both dangerous goods and non-dangerous goods, the number of packages containing dangerous goods shall be added in the “Handling Information” box.</td>
</tr>
</tbody>
</table>

### Miscellaneous

- Official IATA Training required. If not available, please contact IATA authorized expert.
- State of charge (SoC) must not exceed 30%

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Example 3 Air Waybill containing 5 packages with lithium batteries packed with or contained in equipment (power tools) together with 20 packages with non-dangerous goods (such as conventional, corded power tools).
### Transportation Mode

<table>
<thead>
<tr>
<th>Prototypes</th>
<th>Prototypes</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Road/Rail/Sea Freight</strong></td>
<td><strong>Airfreight</strong></td>
</tr>
</tbody>
</table>
| Prototypes: Lithium batteries without testing according to UN Test 38.3; Lithium batteries packed with or contained in equipment. Only for transport of:  
  - small production series of max. 100 batteries (IATA: annual production)  
  - prototypes for testing reasons only | IATA SP A88, P910: Approval required from the Competent Authority of the state of origin. Note: to/across/via USA additional approval required from US Authority (DOT) |

### Special Provision, Packing Instruction

<table>
<thead>
<tr>
<th>Prototypes</th>
<th>Prototypes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADR/RID/IMDG Code: SP 310, P910</td>
<td>IATA SP A88, P910: Approval required from the Competent Authority of the state of origin. Note: to/across/via USA additional approval required from US Authority (DOT)</td>
</tr>
</tbody>
</table>

### Max. Quantity

<table>
<thead>
<tr>
<th>Prototypes</th>
<th>Prototypes</th>
</tr>
</thead>
<tbody>
<tr>
<td>See above</td>
<td>as defined in approval</td>
</tr>
</tbody>
</table>

### Weight Limit

<table>
<thead>
<tr>
<th>Prototypes</th>
<th>Prototypes</th>
</tr>
</thead>
<tbody>
<tr>
<td>n/a</td>
<td>as defined in approval</td>
</tr>
</tbody>
</table>

### Packaging

<table>
<thead>
<tr>
<th>Prototypes</th>
<th>Prototypes</th>
</tr>
</thead>
</table>
| UN approved packaging: e.g. fibreboard box  
(Packing Group II: e.g. UN 4G/Y30/...)  
- Each battery shall be individually packed in an inner packaging, e.g. in a plastic bag  
- Non-combustible, non-conductive thermal insulation material, e.g. Vermiculite  
- Must be secured against movement within the outer packaging | as defined in approval |

### Marking

<table>
<thead>
<tr>
<th>Prototypes</th>
<th>Prototypes</th>
</tr>
</thead>
</table>
| ADR/RID: UN 3480  
IMDG Code: UN 3480 LITHIUM ION BATTERIES (100 x 100 mm) | as defined in approval |

### Transport Document

<table>
<thead>
<tr>
<th>Prototypes</th>
<th>Prototypes</th>
</tr>
</thead>
</table>
| Shipper’s & consignee’s address  
UN 3480 LITHIUM ION BATTERIES, 9, (E)  
Number of packages and packaging type (e.g. 1 fibreboard box)  
Battery weight (e.g. xx kg)  
“CARRIAGE IN ACCORDANCE WITH SPECIAL PROVISION 310”  
IMDG Code: IMO-DANGEROUS GOODS DECLARATION (SOLAS 74, KAP. VII, REG 5, MARPOL 73/79, ANNEX III REG. 4 OF IMDG-CODE) | as defined in approval |

### Miscellaneous

<table>
<thead>
<tr>
<th>Prototypes</th>
<th>Prototypes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personnel shall be trained commensurate with responsibilities</td>
<td>as defined in approval</td>
</tr>
<tr>
<td>Transportation Mode</td>
<td>Damaged or Defective Batteries</td>
</tr>
<tr>
<td>---------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>Special Provision, Packing Instruction</td>
<td>SP 376, P908</td>
</tr>
</tbody>
</table>

### Criteria for “Damaged or Defective”

#### “Non-critical” (no possible danger during transport)
Batteries such that they do not conform to the tested type according to the applicable provisions of the UN Manual of Tests and Criteria, 38.3
This includes:
- Batteries identified as being defective for safety reasons;
- Batteries that have leaked or vented;
- Batteries that cannot be diagnosed prior to carriage; or
- Batteries that have sustained physical or mechanical damage

The following provisions (below) apply to batteries not liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours.

#### “Critical” (possible danger during transport)
Batteries liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours

Note: In order to assess the type of battery, its previous use and misuse shall be taken into account
Transport only with approval from the Competent Authority (in Germany: Federal Institute for Materials Research and Testing (BAM); detailed requirements as stated in the approval.

### Max. Quantity
n/a

### Weight Limit
A battery with a net mass of more than 30 kg shall be limited to one battery per outer packaging

### Packaging
- Each damaged or defective battery or equipment containing such batteries must be packed separately in leak proof inner packaging to prevent release of electrolyte
- UN approved packaging required for all battery types (Packing Group II), e.g. fibreboard box
- Must be secured against movement within the package
- Sealed packagings shall be fitted with a venting device
- Must be packed with non-combustible and non-conductive thermal insulation material, material class A1 or A2 (non-combustible, e.g. rockwool, glass wool, foamglass, Vermiculite)
- Absorbing material to absorb leaking electrolyte from leaking batteries
- Batteries shall be protected against short circuit

### Marking
- As stated in the approval

| UN 3480 DAMAGED / DEFECTIVE LITHIUM ION BATTERIES |
| UN 3481 DAMAGED / DEFECTIVE LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT |

Packages shall be marked “DAMAGED LITHIUM-ION BATTERIES”

### Transport Document
- As stated in the approval

| Shipper’s & consignee’s address |
| UN 3480 LITHIUM ION BATTERIES, 9, (E) |
| Number of packages and packaging type (e.g. 1 Aluminium box) |
| Battery weight (e.g. xx kg) |

### Miscellaneous
Personnel shall be trained commensurate with responsibilities

### Air Transport of damaged or defective batteries

Batteries, that have been identified as defective for safety reasons by the manufacturer, or that have been damaged, that have the potential of producing a dangerous evolution of heat, fire or short circuit, are forbidden for transport (e.g. those being returned to the manufacturer for safety reasons) (IATA DGR SP A154).
### Transportation Mode

#### Batteries for Disposal & Recycling

**Road/Rail/Sea**

<table>
<thead>
<tr>
<th>Transportation Mode</th>
<th>Batteries for Disposal &amp; Recycling</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 100 Wh (per battery)</td>
<td>&gt; 100 Wh (per battery)</td>
</tr>
</tbody>
</table>

#### Special Provision, Packing Instruction

- SP 377
- P909

#### Max. Quantity

n/a

#### Weight Limit

- 30 kg gross weight per package
- n/a

#### Packaging

For batteries >100 Wh UN-approved packaging required (Packing Group II)

For batteries ≤ 100 Wh and for batteries contained in equipment, UN-approved packaging is not required. Strong outer packagings constructed of suitable material, and of adequate strength and design in relation to the packaging capacity and its intended use.

Batteries shall be packed to prevent short circuits and dangerous evolution of heat.

Protection against short-circuits and dangerous evolution of heat.

This can be achieved by:

- individual protection of the battery terminal
- inner packaging to prevent contact between batteries
- batteries with recessed terminals designed to protect against short-circuits or
- the use of non-conductive and non-combustible cushioning material to fill empty space between the batteries in the package

Batteries shall be secured within the outer packaging to prevent excessive movement during carriage (e.g. by using a non-conductive and non-combustible cushioning material or through the use of a tightly closed plastic bag).

#### Marking

**UN 3480**

- “LITHIUM BATTERIES FOR DISPOSAL”
- or
- “LITHIUM BATTERIES FOR RCYCLING”

#### Transport Document

- Shipper’s & consignee’s address
- UN 3480, WASTE LITHIUM ION BATTERIES, 9, (E)
- Number of packages and packaging type (e.g. 1 Fibreboard box (4G))
- Battery weight (e.g. xx kg)

#### Miscellaneous

Personnel shall be trained commensurate with responsibilities

### Damaged / defective batteries

Batteries identified as being damaged or defective shall be carried in accordance with SP 376, see page 8.

### Air transport of waste batteries

Waste batteries and batteries being shipped for recycling or disposal are prohibited from air transport unless approved by the appropriate national authority of the State of Origin and the State of the Operator (IATA DGR SP A183).

### Batteries for Disposal & Recycling

Alternatively, lithium batteries for disposal and recycling can also be carried (like unused lithium batteries) under ADR SP 230 and SP 188, as appropriate, or – up to the intermediate processing facility – under ADR SP 636).
Further Information:

Dangerous Goods Safety Advisor (DGSA)

Each undertaking, the activities of which include the carriage, or the related packing, loading or unloading, of dangerous goods by road shall appoint one or more safety advisers for the carriage of dangerous goods.

These requirements do not apply to undertakings the activities of which concern quantities in each transport unit smaller than those referred to in ADR 1.1.3.6 (see below).

(ADR 1.8.3)

UN-Test 38.3 as Precondition for Transport

Only those batteries that fulfill the requirements of “UN Manual of Tests and Criteria, chapter 38.3” are allowed for transportation. If there should arise any doubts or questions, the manufacturer should be contacted.

For transport of prototypes (without UN test 38.3) and defective batteries, specific instructions have to be applied, see pages 7 and 8.

(ADR 2.2.9.1.7(a), SP 230, SP 188)

Test summary

Manufacturers and subsequent distributors of cells or batteries shall make available the test summary as specified below.

(ADR 2.2.9.1.7)

Transition rule: Lithium cells and batteries not meeting this requirement may continue to be carried until 31 December 2019.

(ADR 1.6.1.47)

(a) Name of cell, battery, or product manufacturer, as applicable;
(b) Cell, battery, or product manufacturer’s contact information to include address, phone number, email address and website for more information;
(c) Name of the test laboratory to include address, phone number, email address and website for more information;
(d) A unique test report identification number;
(e) Date of test report;
(f) Description of cell or battery to include at a minimum:
   (i) Lithium ion or lithium metal cell or battery;
   (ii) Mass;
   (iii) Watt-hour rating, or lithium content;
   (iv) Physical description of the cell/battery; and
   (v) Model numbers.
(g) List of tests conducted and results (i.e., pass/fail);
(h) Reference to assembled battery testing requirements, if applicable (i.e. 38.3.3(f) and 38.3.3(g));
(i) Reference to the revised edition of the Manual of Tests and Criteria used and to amendments thereto, if any; and
(j) Signature with name and title of signatory as an indication of the validity of information provided.

(UN Manual of Tests and Criteria 38.3.5)

Quality Management Programme

The requirements for quality management programmes need to be respected by cell and battery manufacturers as well as those who modify batteries. Please refer to the original literature for details.

(ADR 2.2.9.1.7(e), SP 230, SP 188)

What should be considered by customers for return shipments?
The consigner, carrier and – if applicable – also a third party on whose behalf the consigner is acting are responsible for the proper shipment.

As a matter of principle, for returns or reshipment the same rules apply like mentioned above. If possible, the original packaging should be used for transport. If the original packaging the marking or even the necessary transport documents are not available for the shipper, they must be provided by the manufacturer or supplier or forwarder to the shipper or the carrier prior transportation.

Exemptions from Dangerous Goods Transport Regulations (ADR)
The provisions of ADR do not apply to companies carrying goods as ancillary process to their main business activity (e.g. deliveries or returns from building sites or demonstration purposes) (“Craftsman Regulation” ADR 1.1.3.1c).

ADR rules do not apply to private individuals where the batteries are packaged for retail sale and if the transport is intended for their personal use (ADR 1.1.3.1a).

Exemptions related to quantities carried per transport unit

For lithium ion batteries or devices with lithium ion batteries >100 Wh a weight limit of 333 kg (battery weight) applies in connection with reduced requirements on transport devices (lorry equipment, driver’s qualification) (ADR 1.1.3.6).

Cargo securing

Where applicable, cargo shall be secured by suitable means (ADR 7.5.7).

Cells and single cell batteries

This document refers only to batteries comprising two or more cells. Different exemption limits exist for cells and single cell batteries.
Annex

Class 9 hazard
Miscellaneous dangerous substances and articles (ADR 5.2.2.2.2)
Label No 9A
Full-scale template

UN 3480
Lithium Ion Batteries
(without equipment)
Class 9 hazard
Miscellaneous dangerous substances and articles (ADR 5.2.2.2.2)
Label № 9A
Full-scale template

UN 3481
Lithium Ion Batteries
packed with equipment or contained in equipment
Lithium Battery Label
(ADR 5.2.1.9.2, IATA DGR 7.1.5.5, Fig. 7.1.C)
Full-scale template

UN 3480
Lithium Ion Batteries
(without equipment)

- cut out outside the red hatching
- insert telephone number

UN 3480
Tel. _______________
Lithium Battery Label
(ADR 5.2.1.9.2, IATA DGR 7.1.5.5, Fig. 7.1.C)
Full-scale template

UN 3481
Lithium Ion Batteries
packed with or contained in equipment

- cut out outside the red hatching
- insert telephone number

UN 3481
Tel. _______________