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Leaflet No. 36

Shipping Lithium Ion Batteries and Lithium-Ion-Batteries in/with Equipment Implementation of Dangerous Goods Transport Regulations

Edition March 2023

ZVEI Batteries Division

Verband der Elektro- und Digitalindustrie

General

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 have been produced to provide initial practical guidance to the regulations for the carriage of lithium ion batteries and lithium ion batteries in/with equipment.

In any case it is necessary to consult the regulations themselves for details. The applicable regulations are listed below. They 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 a nominal energy up to maximum 100 Wh.

Whereas lithium ion batteries with a nominal energy 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 DGR.

The regulations are subject to change on an annual or biennial basis.

Lithium ion batteries are classified as follows:

UN 3480 Lithium ion batteries

UN 3481 Lithium ion batteries contained in equipment

UN 3481 Lithium ion batteries packed with equipment

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

Local authorities are responsible for the interpretation and implementation of the relevant regulations. They can, at their discretion, make decisions differing from this guideline.

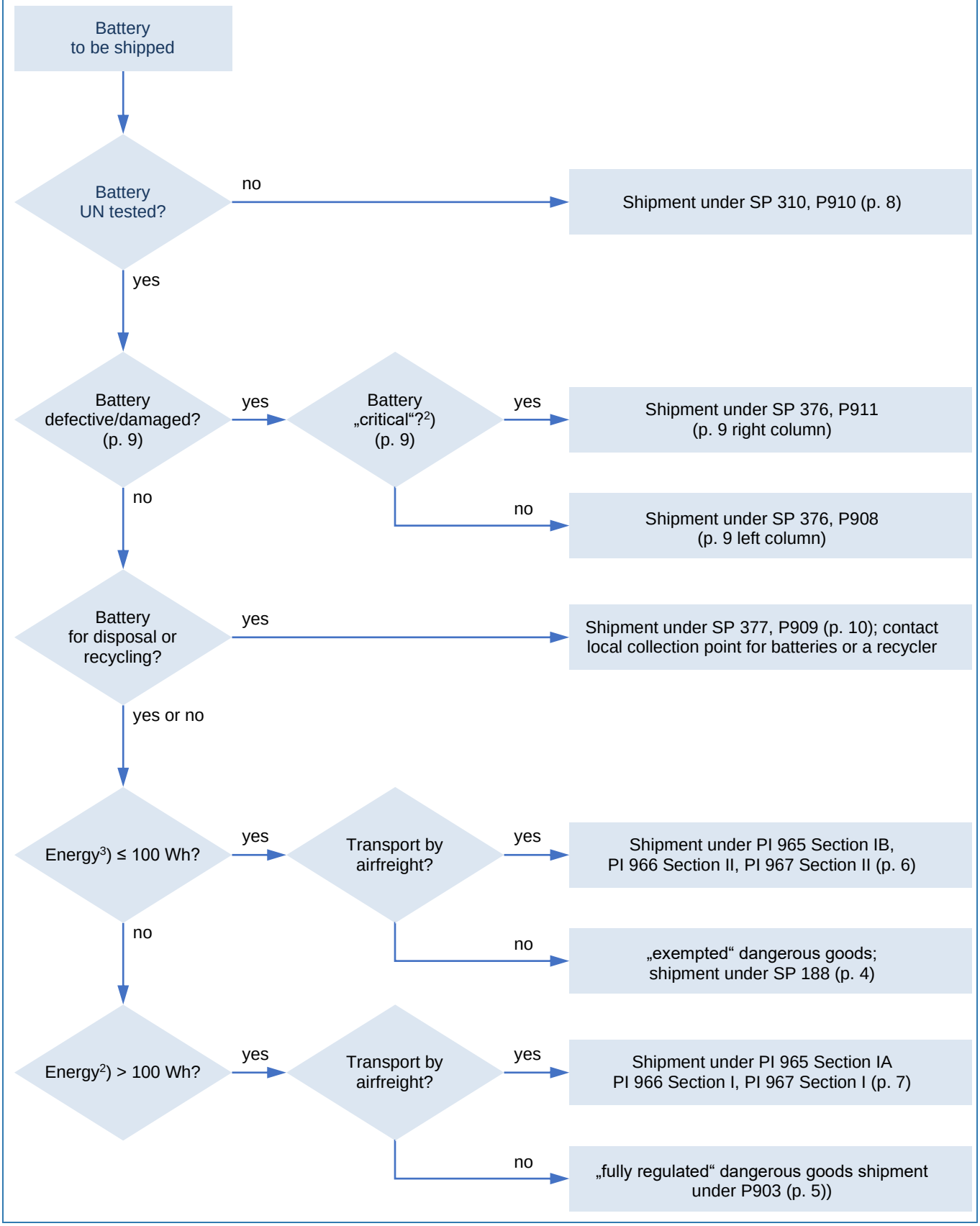
Despite the greatest possible care during the revision and composition, no liability can be assumed for the content and the completeness of this document.

Legend:

ADR[1]	Accord relatif au transport international des marchandises Dangereuses par Route, (Agreement concerning the international carriage of Dangerous goods by Road)
RID	Règlement concernant le transport International ferroviaire de marchandises Dangereuses (Regulations concerning the International Carriage of Dangerous Goods by Rai)
IMDG Code	International Maritime Code for Dangerous Goods
IATA DGR	International Air Transport Association Dangerous Goods Regulations
PI	Packing Instruction
SP	Special Provision
n/a	not applicable

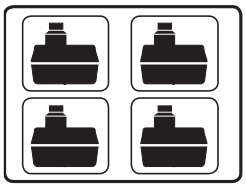
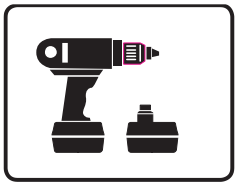
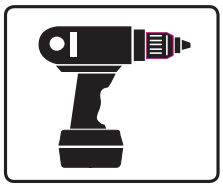
[1] The ADR is available for download from the UNECE Website under transport >> dangerous goods.

Flow chart to determine the appropriate Packing Instruction

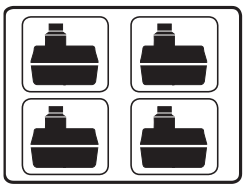
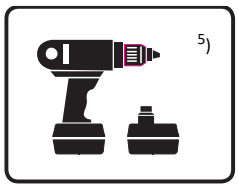
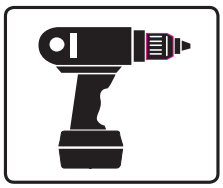
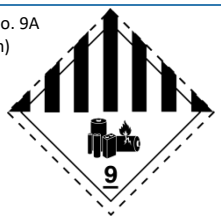
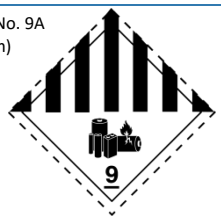


Note: Please also take into consideration the information on page 2 and further requirements on page 11.

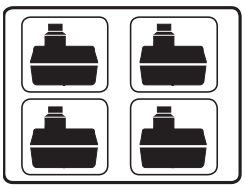
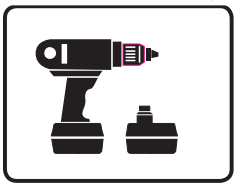
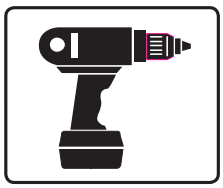
[2]) In case of doubt consult the manufacturer
[3]) (Nominal) Energy [Wh] = Capacity [Ah] x Voltage [V] (see name plate)

Transportation Mode	**Road / Rail (ADR/RID), Sea Freight (IMDG Code)**		
Nominal Energy	**≤ 100 Wh (per battery)**		
Description	**Batteries** (without equipment) 	**Batteries packed with equipment** [4] (at least one battery which is not attached) 	**Batteries contained in equipment** [4] (contained/plugged-in) 
Special Provision / Packing Instruction	ADR/RID SP 188, IMDG Code SP 188		
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.		strong outer packaging protection against unintentional activation short circuit protection
Marking	Lithium battery mark 	Lithium battery mark 	Lithium battery mark  not applicable if no more than two batteries are installed and if there are no more than two packages in the consignment
Sea Freight Container-Marking	none		
Transport Document	n/a		n/a
Miscellaneous	Personnel shall be trained commensurate with responsibilities		

[4]) "Equipment" means apparatus for which the lithium batteries will provide electrical power for its operation.

Transportation Mode	**Road / Rail (ADR/RID), Sea Freight (IMDG Code)**		
Nominal Energy	**> 100 Wh (per battery)**		
Name and Description	**Batteries** (without equipment) 	**Batteries packed with equipment** (at least one battery which is not attached)  [5]	**Batteries contained in equipment** (contained/plugged-in) 
Special Provision / Packing Instruction	P903, LP903	SP 390, P903, LP903	
Max. Quantity	ADR 1.1.3.6: max. 333 kg (per transport unit, e.g. truck incl. trailer) If exceeded, further requirements for vehicle equipment and driver		
Weight Limit	n/a		
Packaging	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/…)		strong outer packaging protection against unintentional activation short circuit protection
Marking	Hazard label No. 9A (10 cm x 10 cm)  ADR: UN 3480 IMDG Code: LITHIUM-ION BATTERIES UN 3480	Hazard label No. 9A (10 cm x 10 cm)  ADR: UN 3481 IMDG Code: LITHIUM-ION BATTERIES PACKED WITH EQUIPMENT UN 3481 or LITHIUM-ION BATTERIES CONTAINED IN EQUIPMENT UN 3481	
Sea Freight Container-Marking	Container Plackards (min. 25 cm x 25 cm) 		
Transport Document	UN 3480 LITHIUM ION BATTERIES, 9, (E) Number of packages and packaging type (e.g. 1 Fibreboard box) weight (e.g. xx kg) Shipper's & consignee's address Sea freight (IMDG Code): (language Englisch) IMO-DANGEROUS GOODS DECLARATION (SOLAS 74, KAP. VII, REG 5, MARPOL 73/79, ANNEX III REG. 4 OF IMDG-CODE)	UN 3481 LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, 9, (E) Number of packages and packaging type (e.g. 1 Fibreboard box) weight (e.g. xx kg) Shipper's & consignee's address Sea freight (IMDG Code): (language Englisch) IMO-DANGEROUS GOODS DECLARATION (SOLAS 74, KAP. VII, REG 5, MARPOL 73/79, ANNEX III REG. 4 OF IMDG-CODE)	UN 3481 LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, 9, (E) Number of packages and packaging type (e.g. 1 Fibreboard box) weight (e.g. xx kg) Shipper's & consignee's address Sea freight (IMDG Code): (language Englisch) IMO-DANGEROUS GOODS DECLARATION (SOLAS 74, KAP. VII, REG 5, MARPOL 73/79, ANNEX III REG. 4 OF IMDG-CODE)
Applicable Special Provisions	188, 230, 310, 348, 376, 377, 387, 636	188, 230, 310, 348, 360, 376, 377, 387, 390, 670	
Miscellaneous	Personnel shall be trained commensurate with responsibilities		

[5]) The picture shows a battery contained in equipment as well as packed with equipment. For such combinations, SP 390 and P903 since ADR 2021 contain detailed regulations aiming at harmonization with SP A 181 in the IATA DGR for air transport.

Transportation Mode	**Airfreight (IATA)**			
Nominal Energy	**≤ 100 Wh (per battery)**			
Name and Description	**Batteries** (without equipment) 		**Batteries packed with equipment** [6] (at least one battery which is not attached) 	**Batteries contained in equipment** [6] (contained/plugged-in) 
Packing Instructions	IATA PI965 Section IB	~~IATA PI965 Section II~~ deleted, not applicable since 01.04.2022	IATA PI966 Section II	IATA PI967 Section II
Max. Quantity	none (more than 2 batteries per package)		As required for operation, plus 2 for replacement	n/a
Weight Limit	PAX: forbidden CAO: 10 kg net battery weight per package)		PAX/CAO: 5 kg net battery weight per package	
Packaging	Strong outer packaging (fibreboard box) , stacking test 3 m in PI 965, Section IB. Batteries must be placed in inner packaging that completely encloses the battery; Batteries must be secured against movement within the outer packaging; Batteries must be protected to prevent short circuits			Strong outer packaging or equivalent protection of the battery by the device Protection against unintended putting into service. Protection against movements within the packaging; Protection against short circuit
Marking	UN 3480 LITHIUM ION BATTERIES, battery weight (e.g. net qty xx kg) Shipper's / Consignee's address    		 	Up to 2 batteries per package: no battery handling label required More than 2 batteries per package: battery handling label required 
Transport Document	Shipper's Declaration for Dangerous Goods: UN 3480 Lithium ion batteries, 9, // __ Fibreboard box(es) x __ kg // 965 // IB, see Example 1, Delete the "PASSENGER AND CARGO AIRCRAFT" box		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 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" see Example 2
Miscellaneous	Official IATA-Training by authorized trainer required, If not available, please contact IATA authorized expert.		Adequate instruction commensurate with responsibilities.	
	State of charge (SoC) must not exceed 30 %.			

Example 1 Shipper's Declaration Lithium Batteries PI 965 Section IB

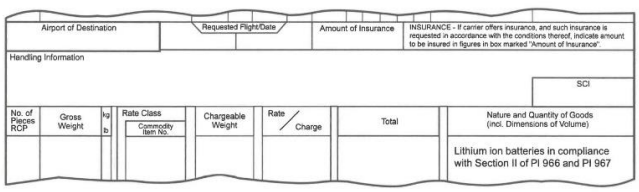
Shipper's Declaration Completion

NATURE AND QUANTITY OF DANGEROUS GOODS

Dangerous Goods Identification

UN or ID No.	Proper Shipping Name	Class or Division (Subsidiary Risk)	Packing Group	Quality and Type of packing	Packing Inst.	Authorisation
UN 3480	Lithium ion batteries	II	N	1 Fibreboard box x 5,5 kg G	965	IB

Example 2 Air Waybill Lithium Batteries PI 966 and PI 967 Section II



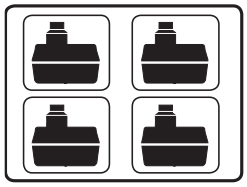
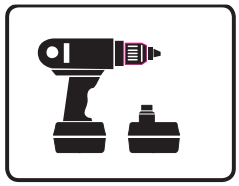
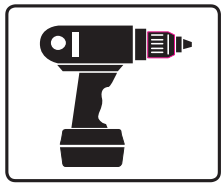
Airport of Destination | Requested Flight/Date | Amount of Insurance | INSURANCE - If carrier offers insurance, and such insurance is requested in accordance with the conditions thereof, indicate amount to be insured in figures in box marked "Amount of Insurance".

Handling Information

SCI

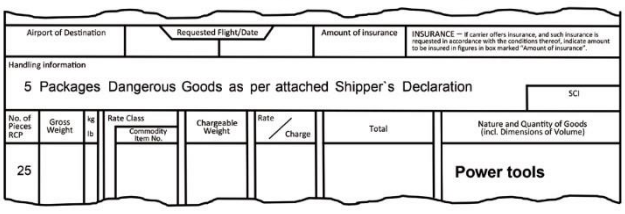
No. of Pieces RCP	Gross Weight	kg / lb	Rate Class / Commodity Item No.	Chargeable Weight	Rate / Charge	Total	Nature and Quantity of Goods (incl. Dimensions or Volume)
							Lithium ion batteries in compliance with Section II of PI 966 and PI 967

[6]) "Equipment" means apparatus for which the lithium batteries will provide electrical power for its operation.

Transportation Mode	**Airfreight (IATA)**		
Nominal Energy	**> 100 Wh (pro Batterie)**		
Name and Description	**Batteries** (without equipment) 	**Batteries packed with equipment** (at least one battery which is not attached) 	**Batteries contained in equipment** (contained/plugged-in) 
Packing Instructions	IATA PI 965 Section IA	IATA PI 966 Section I	IATA PI 967 Section I
Max. Quantity	n/a	As required for operation, plus 2 for replacement	n/a
Weight Limit	PAX: forbidden CAO: 35 kg net battery weight per package)	PAX: 5 kg net battery weight per package CAO: 35 kg net battery weight per package	
Packaging	Batteries must be placed in inner packagings that completely enclose the battery, batteries must be protected to prevent short circuits UN approved packaging (Packing Group II: e.g. UN 4G/Y30/…)	Batteries must be placed in inner packagings that completely enclose the battery, batteries must be protected so as to prevent short circuits UN approved packaging (Packing Group II: e.g. UN 4G/Y30/…)	Equipment containing batteries must be secured and packed to prevent accidental operation during transport Batteries must be protected so as to prevent short circuits. This includes protection against contact with conductive materials within the same packaging. Strong outer packaging (e.g. cardboard box) UN approved packaging not required (SP A48)
Marking	LITHIUM ION BATTERIES, UN 3480 Net weight (NET QTY) Shipper's/Consignee's address  	LITHIUM ION BATTERIES PACKED WITH EQUIPMENT, UN 3481 Net weight (NET QTY) Shipper's/Consignee's address 	LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT, UN 3481 Net weight (NET QTY) Shipper's/Consignee's address 
Transport Document	Shipper's Declaration for Dangerous Goods: UN 3480, Lithium ion batteries, 9 // 965, delete the "PASSENGER AND CARGO AIRCRAFT" box	Shipper's Declaration for Dangerous Goods: UN 3481, Lithium ion batteries packed with equipment, 9 // 966	Shipper's Declaration for Dangerous Goods: UN 3481, Lithium ion batteries contained in equipment, 9 // 967
Information on the Air Waybill (AWB)	In the "Handling Information" box: "Dangerous Goods as per Shipper 's Declaration CAO"	In the "Handling Information" box: "Dangerous Goods as per Shipper 's Declaration" , see example 3	
	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.		
Other Provisions	State of charge (SoC) must not exceed 30 %.		
Applicable Special Provisions	A88, A99, A154, A164, A183, A201, A213, A331, A334, A802	A48, A88, A99, A154, A164, A181, A185, A213, A220	A88, A99, A154, A164, A181, A185, A213, A802
Training	Official IATA-Training required. If not available, please contact IATA authorized expert.		

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

For a Shipment Containing Dangerous Goods and Non-Dangerous Goods



Transportation Mode	**Prototypes** **Road / Rail / Sea Freight**	**Prototypes** **Airfreight**
Description	Prototypes: Lithium batteries without testing according to UN Manual of Tests and Criteria, Chapter 38.3; Lithium batteries; 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	
Special Provision, Packing Instruction	ADR/RID/IMDG Code SP 310, P910	IATA DGR SP A88, PI 910 (Approval required from the Competent Authority of the state of origin) Note: to/across/via USA additional approval required from US Authority (DOT)
Packing Instructions	See above	as defined in approval
Max. Quantity	n/a	as defined in approval
Weight Limit	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
Packaging	ADR/RID: UN 3480 IMDG Code: LITHIUM-ION BATTERIES UN 3480 (100 x 100 mm) 	as defined in approval
Marking	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
Sonstiges	Personnel shall be trained commensurate with responsibilities	as defined in approval

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Transportation Mode	**Damaged or Defective Batteries** **Road / Rail / Sea**	
Special Provision, Packing Instruction	SP 376, P908	SP 376, P911
Criteria for "Damaged or Defective""	**"Non-critical"[7]) (no possible danger during transport)** Such Batteries 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 In assessing a cell or battery as damaged or defective, an assessment or evaluation shall be performed based on safety criteria from the cell, battery or product manufacturer or by a technical expert with knowledge of the cell's or battery's safety features. An assessment or evaluation may include, but is not limited to, the criteria mentioned in SP 376.	**"Critical"[7]) (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
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	• The packaging shall be capable of meeting certain 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, as specified in P911. • The additional packaging performance requirements shall be verified by a test as specified by the competent authority • A verification report shall be available on request as specified in P911. • Cells or batteries shall be protected against short circuit. • Alternative packing and/or carriage conditions may be authorized by the competent authority (in Germany: Federal Institute for Materials Research and Testing, BAM); detailed requirements as stated in the authorization.
Marking	UN 3480 DAMAGED / DEFECTIVE LITHIUM ION BATTERIES UN 3481 DAMAGED / DEFECTIVE LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT 	UN 3480 DAMAGED / DEFECTIVE LITHIUM ION BATTERIES UN 3481 DAMAGED / DEFECTIVE LITHIUM ION BATTERIES CONTAINED IN EQUIPMENT 
Transport Document	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) "Transport in accordance with special provision 376" If applicable, a copy of the competent authority approval shall accompany the carriage.	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) "Transport in accordance with special provision 376" If applicable, a copy of the competent authority approval shall accompany the carriage.
Miscellaneous		The batteries are assigned to transport category 0[8])
	Personnel shall be trained commensurate with responsibilities	

Air Transport of damaged or defective batteries

Damaged or defective cell or batteries, whether they have been identified as "non-critical" or as "critical", are forbidden for air transport (IATA DGR Special Provision A154).

[7]) In assessing a battery as damaged or defective, the type of battery and its previous use and misuse shall be taken into account. In case of doubt consult the manufacturer.

[8]) i.e. no exemption related to quantities carried per transport unit

Transportation Mode	**Batteries for Disposal & Recycling** **Road / Rail / Sea**	
Nominal Energy	**≤ 100 Wh (per battery)**	**> 100 Wh (per battery)**
Criteria for "Damaged or Defective"	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 UN 3480 LITHIUM BATTERIES FOR RCYCLING 	
Transportation 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 9.

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).

More exemptions for lithium cells and batteries installed in equipment from private households are regulated in SP 670.

Additional 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 fulfil the requirements of chapter 38.3 of the UN Manual of Tests and Criteria are allowed for transportation. The relevant revision can be gathered from: ADR 1.2.1.

For transport of prototypes (without UN test 38.3) and defective batteries, specific instructions have to be applied, see pages 9 and 10.
(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 (Exception: Button cells in equipment).
(ADR 2.2.9.1.7)

(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 of cell or battery;

  (iii) Watt-hour rating, or lithium content;

  (iv) Physical description of the cell/battery; and

  (v) Cell or battery model number or, alternatively, if the test summary is established for a product containing a cell or battery, the product model number;

(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) Name and title of responsible person as an indication of the validity of information provided.

UN Manual of Tests and Criteria 38.3.5)
More information is available under:
http://www.unece.org/fileadmin/DAM/trans/doc/2018/dgac10c3/UN-SCETDG-53-INF38e.pdf

Quality Management Programme

The requirements for quality managements 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).

Dangerous goods (e.g. lithium batteries, fuel cell cartridges) contained in equipment such as data loggers and cargo tracking devices, attached to or placed in packages, overpacks, containers or load compartments are only subject to: ADR 5.5.4.

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) normally 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

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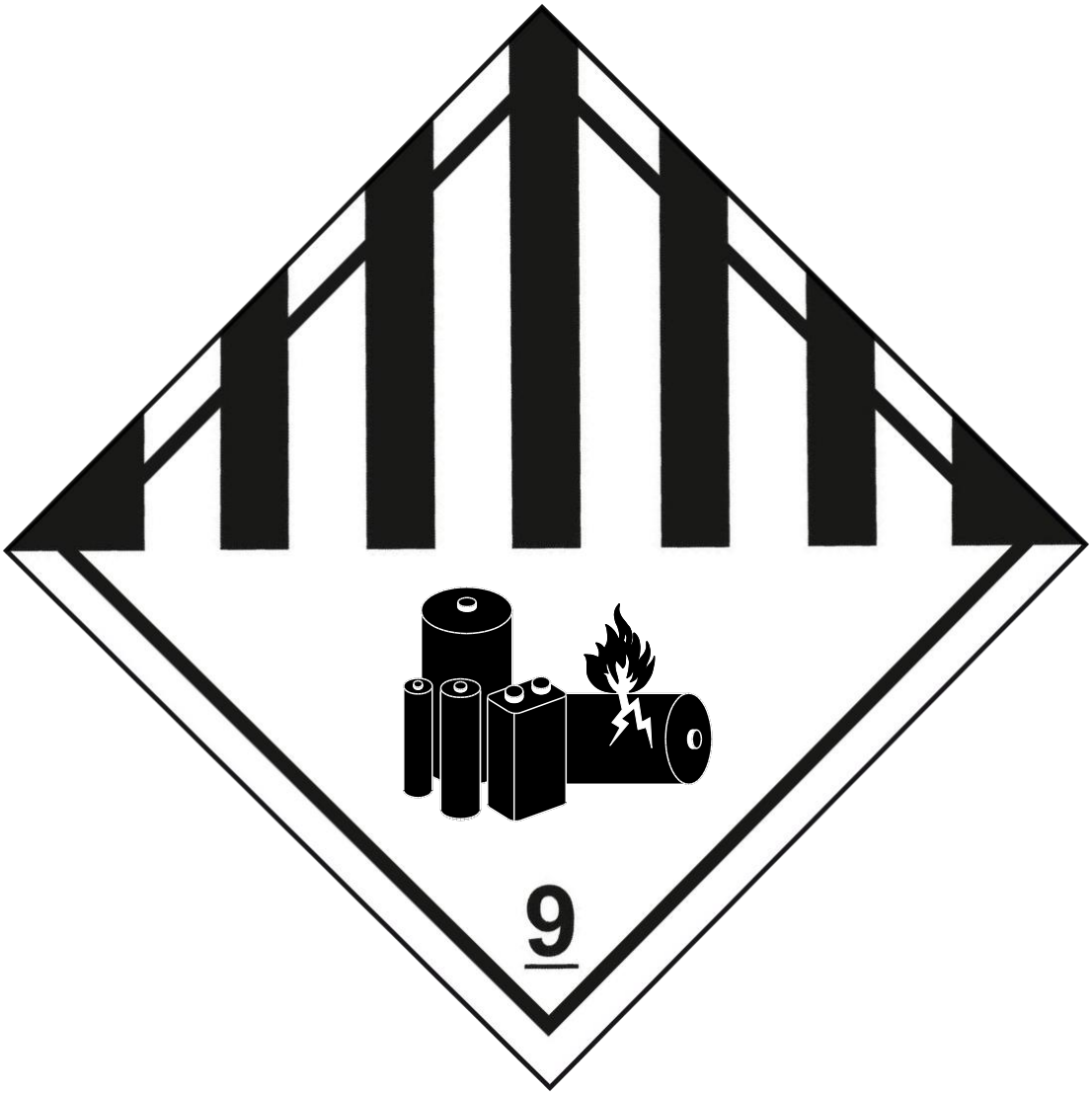
Appendix

Class 9 hazard
Miscellaneous dangerous substances and articles (ADR 5.2.2.2.2)
Hazard label No 9A

Full-scale template for labelling of the package

UN 3480 Lithium Ion Batteries (without equipment)

cut here



UN 3480

Class 9 hazard
Miscellaneous dangerous substances and articles (ADR 5.2.2.2.2)
Hazard label No 9A

Full-scale template for labelling of the package

UN 3481 Lithium Ion Batteries packed with equipment or contained in equipment

cut here

UN 3481

Lithium Battery Label
(ADR 5.2.1.9.2, IATA DGR 7.1.5.5, Fig. 7.1.C)

Full-scale template for labelling of the package

UN 3480 Lithium Ion Batteries (without equipment)

- Cut outside the red hatching
- Telephone number not required. Lithium battery marks with a telephone number may be used until 31.12.2026 (ADR 1.6.1.49)

Lithium Battery Label
(ADR 5.2.1.9.2, IATA DGR 7.1.5.5, Fig. 7.1.C)

Full-scale template for labelling of the package

UN 3481 Lithium Ion Batteries packed with or contained in equipment

- Cut outside the red hatching
- Telephone number not required. Lithium battery marks with a telephone number may be used until 31.12.2026 (ADR 1.6.1.49)