

TRANSPORT
FROM
(i.e. from primary cells / batteries)
LITHIUM METAL
BATTERIES* (BATTERY PACKS) **CELLS*** (BATTERY
CELLS)

UN3090 LITHIUM METAL BATTERIES
(English shipping name)

Dangerous goods class 9

Note: UN38.3 TEST SUMMARY REQUIRED SINCE 01.01.2020.
(An example of the test summary can be found on the last page)

Road transport **ADR**
Rail transport **RID**
Ocean transport **IMDG**
Air transport **IATA-ICAO**



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* Please note the explanation of terms on page 9!

TRANSPORT BY ROAD ADR / RAIL RID

1) Battery packs (primary batteries) up to 2g lithium content / cells (secondary cells) up to 1g lithium content

Packing:

Inner and outer packaging according to SV 188 (SV = special regulation)*.

Max. Gross mass per package: 30.00 kg

The cells or battery packs must be protected against short circuits.

Labelling:



Sticker: "Lithium batteries" shown in reduced size,
Black on white, red border with diagonal lines

Minimum width of red hatching 5mm.
If the package permits, the dimensions,
line width
may be reduced up to 105mm in width and 74mm in height.

* UN 3090

** Telephone number for additional information

Documents:

No transport document required

*SV: 188 (special provision 188 ADR/RID)

Cells and batteries must be packed in inner packagings that completely enclose them, they must be protected in such a way that a short circuit is prevented, this also includes protection against contact with conductive materials inside the packaging that can cause a short circuit. The inner packagings must be packed in strong outer packagings, the package must withstand a drop test from a height of 1.2m.

Please note that the cells or batteries must be already tested according to UN38.3, i.e. no prototypes may be transported under this SV.

2) Battery packs (primary batteries) over 2g lithium content / cells (primary cells) over 1g lithium content

Packing:

Inner and outer packaging according to VA 903 (VA = packaging instruction)

Packing group II drums and boxes

> than 12 kg: resistant outer packaging, protective enclosures or pallets

The cells or battery packs must be protected against short circuits.

Labelling:



Dimensions:
min. 100x100mm,
Inner line **at about** 5mm distance from the outer edge

Hazard label class 9 model 9A,
shown in reduced size, black on white

the UN 3090 must also be clearly marked on the outside of the package and be at least 12 mm in size.

Documents:

The goods must be accompanied by a transport document which must contain, among other things, the following information:

UN3090 LITHIUM METAL BATTERIES, 9, (E)
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Transport of exempted quantities according to ADR 1.1.3.6

Transport category 2:

According to this regulation of the ADR, Li-metal battery packs (primarily batteries) or cells (primarily cells) up to a maximum net weight of 333 kg can be transported as exempted quantity.

This offers the advantage that the vehicle does not have to be marked as dangerous goods transport (full transport) and the driver does not have to have an ADR licence. As long as the dangerous goods loaded do not exceed 1000 points!

Sum of dangerous goods points = net weight x 3

TRANSPORT BY SEA FREIGHT IMDG

3) Battery packs (primary batteries) up to 2g lithium content / cells (secondary cells) up to 1g lithium content

Packing:

Inner and outer packaging according to SV 188 (SV = special regulation)*.

Max. Gross mass per package: 30.00 kg

The cells or battery packs must be protected against short circuits.

Labelling:



Sticker: "Lithium batteries" shown in reduced size,
Black on white, red border with diagonal lines

Minimum width of red hatching 5mm.
If the package permits, the dimensions,
line width
may be reduced up to 105mm in width and 74mm in height.

* UN 3090

** Telephone number for additional information

Documents:

No transport document required

*SV: 188 (special provision 188 IMDG)

Cells and batteries must be packed in inner packagings that completely enclose them, they must be protected in such a way that a short circuit is prevented, this also includes protection against contact with conductive materials inside the packaging that can cause a short circuit. The inner packagings must be packed in strong outer packagings, the package must withstand a drop test from a height of 1.2m.

Please note that the cells or batteries must be already tested according to UN38.3, i.e. no prototypes may be transported under this SV.

4) Battery packs (primarily batteries) over 2g lithium content, cells (primarily cells) over 1g lithium content

Packing:

Inner and outer packaging according to VA 903 (VA = packaging instruction)

Packing group II drums and boxes

> than 12 kg: resistant outer packaging, protective enclosures or pallets

The cells or battery packs must be protected against short circuits.

Labelling:



Dimensions:
min. 100x100mm,
inner line **at approx.** 5mm distance from outer edge

Hazard label class 9, model 9A,
shown in reduced size, black on white

UN 3090 must also be clearly marked on the outside of the package and be at least 12 mm in size, as well as the designation "Lithium metal batteries".

Documents:

The goods must be accompanied by an IMO declaration which must contain, among other things, the following information:

UN 3090 Lithium metal batteries, 9, F-A, S-I

Example IMO:

UN-Nr. UN-No.	Inhalt (richtiger technischer Name) Proper Shipping Name (Correct technical name) *	Klasse/Unter- Klasse nach IMO IMO-Class	Verpackungs- gruppe Packaging group	Markierung der Versandstücke Falls zutreffend, Identifikations-Nummer oder arztl. Kennzeichen Marks & Nos, if applicable, identification or registration number(s) of the Unit	Anzahl und Verp.-Art No. and kind of packages
UN3090	Lithium metal batteries	9			1 Fibre Board Box (4G)
<small>Bruttomenge (Volumen/Masse) Gross quantity (volume/mass) Nettomenge (Volumen/Masse) / Net quantity (volume/mass) Netto Explosivstoffmasse, *** – Net explosive mass ***</small>		<small>Merksblatt-Nr. für Unfall-Maßnahmen EmS No.</small>	<small>Eigenschaften / Properties Flammpunkt / Flashpoint ** MARINE POLLUTANT ** Kontroll- und Notfalltemperatur ** Control- and emergency temperature **</small>		<small>Güter angeleitet als / Goods delivered as:</small> <input type="checkbox"/> Stückgut/Breakbulk cargo <input type="checkbox"/> Ladungseinheiten (Unit Loads) Unitized cargo <input checked="" type="checkbox"/> Bulkverpackungen/Bulk packages <small>Art der Einheit (Container, Anhänger, Tank, Fahrzeug usw.) Type of unit (container, trailer, tank, vehicle etc.)</small>
4.5 kg net quantity 7.0 kg gross quantity		F-A S-I			

TRANSPORT BY AIR - IATA DGR

1) Battery packs (primarily batteries) / cells (primarily cells)

a.) less than or equal to 0.3g lithium content per cell/battery pack and max. 2.5kg total net quantitygeb.

) greater than 0.3g up to max 1g lithium content per cell/battery pack and maximum 8 cells or 2 battery packs greater than 0.3g up to max 2g lithium content in no more than one package

Packing:

According to IATA DGR Packing Instruction VA:968, Part II

Labelling:



Minimum width of red hatching 5mm.



Dimensions:
min. 120 x 110mm

* UN 3090

** Telephone number for additional information

Documents:

the air waybill must contain, inter alia, the sentence

"Lithium metal batteries in compliance with Section II of PI968" und "CAO"

be noted.

DGD (Dangerous Goods Declaration) is not required.

ATTENTION:

As of 1 April 2016, only one package per consignment prepared in accordance with PI968 Part II may be offered for shipment by air transport, also overpacks may not contain more than 1 package in accordance with PI968 Part II.

If more than 1 package according to PI968 II is to be shipped per consignment or more than 1 package is to be shipped in an overpack, these packages must be prepared for shipment according to PI968 IB! (see below)

2) Battery packs (primarily batteries) / cells (primarily cells)

- a.) greater than 0.3g to max 1g lithium content per cell and more than 8 cells.
- b.) greater than 0.3g to max 2g lithium content per battery pack and more than 2 battery packs.

Packing:

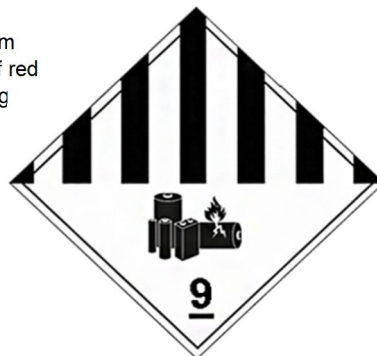
According to IATA DGR Packing Instruction VA:968, Part IB

Max. Net quantity per package: Cargo aircraft only: 2.5 kg

Labelling:



Minimum width of red hatching 5mm.



Dimensions: min. 100x100mm, inner line at approx. 5mm distance from outer edge

Dimensions: min. 120 x 110mm



* UN 3090

** Telephone number for additional information

In addition, must:

Sender and recipient

UN 3090 min. 12mm + "LITHIUM METAL BATTERIES".

Net weight, if applicable

be clearly marked on the package

Documents:

the air waybill must contain, inter alia, the sentence

"Dangerous Goods as per attached Shippers Declaration" und "CAO"

be noted.

A DGD (Dangerous Goods Declaration) with the following information on the dangerous goods is also mandatory

UN3090, Lithium metal batteries, 9, 968 IB



TRANSPORT OF LITHIUM METAL BATTERIES (PRIMARY PACK) Cells (PRIMARY cells)

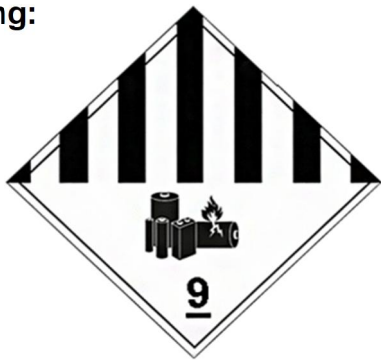
3) Battery packs (primary batteries) with more than 2g lithium content (secondary cells) with more than 1g lithium content

Packing:

According to IATA DGR Packing Instruction VA:968, Part IA
 Max. Net quantity per package: Cargo aircraft only: 35 kg

Labelling:

Dimensions:
 min.
 100x100mm,
 inner line at
 approx. 5mm
 distance from
 outer edge



Dimensions:
 min. 120 x 110mm

In addition, must:

Sender and recipient
 UN3090 min. 12mm + "LITHIUM METAL BATTERIES"
 Net weight, if applicable
 be clearly marked on the package

Documents:

the air waybill must contain the sentence
"Dangerous Goods as per attached Shippers Declaration" und "CAO"
 be noted.

A DGD (Dangerous Goods Declaration) with the following information about the dangerous goods is also mandatory:

UN3090, Lithium metal batteries, 9, 968

**Example DGD:
 EXPLANATION
 OF TERMS**

Airport of Destination: JOHN F. KENNEDY				Shipment type: <i>(delete non-applicable)</i>		
				NON-RADIOACTIVE	RADIOACTIVE	
NATURE AND QUANTITY OF DANGEROUS GOODS						
Dangerous Goods Identification						
UN or ID No.	Proper Shipping Name	Class or Division (Subsidiary Risk)	Pack- ing Group	Quantity and type of packing	Packing Inst.	Authorization
UN3090	Lithium metal batteries	9		4 fibreboard boxes x 1,6 kg Overpack used x 4 #1 #2 #3 #4 Total quantity Per overpack: 6,4 kg	968	

In dangerous goods law, the UN number: 3090 is distinguished from:

LITHIUM BATTERY (primary battery = battery pack):

"Battery" means two or more cells which are electrically connected and equipped with devices necessary for use, eg: Battery housing, battery terminals, marking and protection devices. The battery shall be tested in accordance with the requirements of sub-section 38.3 of the UN Manual of Tests and Criteria.



LITHIUM CELLS (primary cell):

A single cell lithium battery is considered a "cell" and shall be tested in accordance with the testing requirements for a "cell" for the purposes of these Regulations and the requirements of subsection 38.3 of the UN Manual of Tests and Criteria.



You can find the lithium content of the cell or battery in the manufacturer's technical data sheet for the cell or battery.

Primary means: Not rechargeable
GENERAL INFORMATION:

As many carriers and forwarding agents have their own requirements for the transport of dangerous goods or do not accept dangerous goods, it is advisable to provide the following details when placing the transport order:

LITHIUM METAL BATTERIES / watt hours
UN 3090 / Class 9
Number and weight of packages

As well as the Material Safety Data Sheet (MSDS) or the Safety Data Sheet (SDS).

In the case of overpacks, the labelling or markings and the UN number (at least 12 mm in size) must be reproduced on the packaging as well as the word: OVERPACK / OVERPACK in at least 12 mm character height.

UN38.3 TEST (test summary mandatory since 01.01.2020)

In principle, all lithium cells and battery packs must be tested in accordance with UN Manual 38.3 UN. In the course of this UN test, the MSDS (Material Safety Datasheet) is also obtained, which all modes of transport generally check in advance whether they accept these goods for transport. The transport of prototypes and pre-series is in principle also possible without UN 38.3 testing under special conditions, but is not dealt with in this guide.

An example of the test summary, which has been mandatory since 01.01.2020, can be found on the last page.

ANNOUNCEMENTS:

Instruction of the employees/participants involved according to their tasks and responsibilities. (e.g.: consignor - instruction on his duties or training).

Transport documents / IMO declarations / DGD / may only be issued by instructed persons who have successfully completed the relevant training.



Important information:

This information has been prepared and compiled according to the latest information available, with care and consideration. All information has been provided to the best of our knowledge and belief. Nevertheless, no liability can be accepted for it, as this information can be updated or changed at any time.

The descriptions do not claim to be complete. This edition supersedes all previous editions; typographical and printing errors excepted.

Applicable laws and regulations must be observed by the distributors and users of the product under their own responsibility.

Example test summary








UN38.3 Test Summary

AccuPower – Research, Development and Distribution Company (Ltd.)

UN38.3 TEST SUMMARY

IN ACCORDANCE WITH SUB-SECTION 38.3.5 OF UN MANUAL OF TESTS AND CRITERIA

Model: APAVL7S10P																											
Type: Lithium-Ion battery 7S10P ICR18650 25.9V / 751Wh / 29Ah																											
1	Manufacturer AccuPower Forschungs-, Entwicklungs- und Vertriebsgesellschaft mbH Pirchäckerstraße 27, 8053 Graz, AUSTRIA Tel.: +43 (316) 26 29 11-0 Mail: info@accupower.at Web: www.accupower.at																										
2	UN38.3 Test lab PONY HQ Building Add: Bldg1, Court 66, Jindai Road, Zhongguancun Environmental Protection Park, Haidian District, Beijing, CHINA / Tel.: +86-10-83055000/82618116 Email: pony@ponytest.com Web: www.ponytest.com																										
3	Test report number: MZIPBAQA88798721																										
4	Date of test report: 09-10-2015																										
5	Description of cell or battery Lithium-Ion battery 7S10P ICR18650 25.9V / 751Wh / 29Ah in shrinking tube with cable, interface and connector, LxBxH: 230 x 120 x 80mm +/- 1mm / 3.660kg +/- 0,050kg, AccuPower Product Model: APAVL7S10P																										
																											
UN38.3 Tests performed and successfully passed																											
<table border="1" style="width: 100%;"> <thead> <tr> <th>Performed test</th> <th>Result</th> </tr> </thead> <tbody> <tr> <td>38.3.4.1 / T1</td> <td>Altitude Simulation</td> <td>Passed</td> </tr> <tr> <td>38.3.4.2 / T2</td> <td>Thermal Test</td> <td>Passed</td> </tr> <tr> <td>38.3.4.3 / T3</td> <td>Vibration</td> <td>Passed</td> </tr> <tr> <td>38.3.4.4 / T4</td> <td>Shock</td> <td>Passed</td> </tr> <tr> <td>38.3.4.5 / T5</td> <td>External Short Circuit</td> <td>Passed</td> </tr> <tr> <td>38.3.4.6 / T6</td> <td>Impact / Crush</td> <td>Passed</td> </tr> <tr> <td>38.3.4.7 / T7</td> <td>Overcharge</td> <td>Passed</td> </tr> <tr> <td>38.3.4.8 / T8</td> <td>Forced Discharge</td> <td>Passed</td> </tr> </tbody> </table>		Performed test	Result	38.3.4.1 / T1	Altitude Simulation	Passed	38.3.4.2 / T2	Thermal Test	Passed	38.3.4.3 / T3	Vibration	Passed	38.3.4.4 / T4	Shock	Passed	38.3.4.5 / T5	External Short Circuit	Passed	38.3.4.6 / T6	Impact / Crush	Passed	38.3.4.7 / T7	Overcharge	Passed	38.3.4.8 / T8	Forced Discharge	Passed
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38.3.4.8 / T8	Forced Discharge	Passed																									
6	<div style="display: flex; align-items: center;">  <div> <p>Transportation Safety Test passed for:</p> <input checked="" type="checkbox"/> Cargo Aircraft only <input checked="" type="checkbox"/> Sea <input checked="" type="checkbox"/> Road </div>  </div>																										
7	Edition of UN Manual of used test and criteria: Rev.5 Amend. 1 & 2																										
8	Assembled Battery Testing Requirements: not applicable																										
9	Name and title of signatory/ company stamp  ACCU POWER Forschungs-, Entwicklungs- und Vertriebsgesellschaft mbH. Pirchäckerstraße 27, A-8053 Graz, AUSTRIA Tel: +43 (0)316 - 262911 10, Fax: 262911 36 info@accupower.at, www.accupower.at  Ing. Issam Al-Abassy / Application Engineering Manager																										