Usage and Disclaimer

This Manual is only valid for Renata Batteries.

Renata SA, has done this manual for internal and external usage. It should be helpful to choose the correct way of packaging for the specified transport modes. Renata SA is not responsible for the context and failures caused by using this manual.

An official manual for shipping Lithium Batteries by Air can be purchased directly by IATA.

For this, please follow this link.
Choose Battery Type

Define Article/Type

Silver Oxide Button Cells

Lithium Metal Button Cells

Lithium Ion/Polymer Batteries

Zinc Air Button Cells
Define Battery Type

Batteryfinder

Lithium Ion/Polymer Batteries

Silver Oxide / Lithium Metal / Zinc Air Button cells
Silver Oxide Button Cells

Choose Transport Mode
Silver Oxide Button Cells

Road Transport (Switzerland/Europe)

According to the SDR/ADR Regulations (Regulations of Dangerous Goods by Roadtransport) our Silver Oxide Button Cells are not classified as hazardous goods and thus not regulated by above mentioned rules. They can be shipped under applying the usual standard packaging rules.

Air Transport

According to the IATA DGR Regulations (Air Transport Dangerous Goods Regulations) in application of the Special Provision A123, section 4.4 our Silver Oxide Button cells are not classified or regulated as a Dangerous Goods. Following information must be showed on the AWB: "Not restricted as per Special Provision A123"
Silver Oxide Button Cells

Sea Transport

According to the IMDG Regulations (International Maritime Code for Dangerous Goods) our Silver Oxide Button cells are not classified as hazardous goods and thus not regulated by above mentioned rules. They can be shipped under applying the usual standard packaging rules.

Rail Transport (Europe)

According to the RID Regulations (Regulations of Dangerous Goods by Railtransport) our Silver Oxide Button cells are not classified as hazardous goods and thus not regulated by above mentioned rules. They can be shipped under applying the usual standard packaging rules.
Lithium Metal Button Cells

Only Batteries

Choose Transport Mode

Download UN38.3 Summary Reports
Lithium Metal Button Cells

**Only Batteries**

Road Transport (Switzerland/Europe), Rail Transport, Sea Transport

<table>
<thead>
<tr>
<th>UN-No.:</th>
<th>UN 3090</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name:</td>
<td>Lithium metal batteries</td>
</tr>
<tr>
<td>Technical Guidelines</td>
<td>Packing Instruction and Special Provisions</td>
</tr>
<tr>
<td>ADR / RID 2021</td>
<td>Special Provision 188</td>
</tr>
</tbody>
</table>

According to the SDR/ADR Regulations / RID Regulations (Regulations of Dangerous Goods by Roadtransport) our Lithium Metal Button cells are generally classified as dangerous goods, but can be permitted as “small” Batteries in compliance with the Special Provision 188 and thus considerably shipped relieved.

<table>
<thead>
<tr>
<th>IMDG Code 2020-2021 (amdt 40-20)</th>
<th>Special Provision 188</th>
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According to the IMDG Code (International Maritime Code for Dangerous Goods) our Lithium Metal Button cells are generally classified as dangerous goods, but can be permitted as “small” Batteries in compliance with the Special Provision 188 and thus considerably shipped relieved.
Lithium Metal Button Cells

Only Batteries

Air Transport

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<td>Proper Shipping Name: Lithium metal batteries</td>
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According to the IATA DGR Regulations (Air Transport Dangerous Goods Regulations) our Lithium Metal Button cells are classified as dangerous goods, but can be permitted in compliance with the above mentioned instructions and thus considerably shipped relieved.


Article Safety Data Sheet
Lithium Metal Button Cells

Only Batteries

Packing Instructions 968 - Section II

Cells and Batteries with a Lithium content of max. 0.3 gram lithium metal
Only cells with a Lithium content of over 0.3 gram lithium metal till max. 1.0 gram lithium metal
Only Batteries with a Lithium content of over 0.3 gram lithium metal till max. 2.0 gram lithium metal
It’s forbidden to combine Cells and Batteries with a Lithium content of over 0.3 gram lithium metal

FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT

Only «rigid» Non UN-proven Outerpackaging Materials are allowed to be used for UN 3090

A shipper is not permitted to present for transport more than one (1) package prepared according to Section II in any single consignment. Not more than one (1) package prepared in accordance with Section II of PI 968 may be placed into an overpack. Max. 2.5 kg net batteries per Shipment allowed. If shipment exceed this quantity then ship it under Section IB with a Shipper’s Declaration DGD! (for further details according to section IB, see next page)

Marks:

It is allowed to build Overpacks. All inner packages needs to be marked completely and the OVERPACK Label must be put on the Overpack package.

Per Package:
Max. 2.5 kg net
Max. 8 cells
Max. 2 batteries
Lithium Metal Button Cells

Only Batteries

Packing Instruction 968 IB

If the before mentioned lithium content limitations are being exceeded, then it has to be followed the Packing Instructions PI 968, Section IB. The shipment can only be sent by a person (for ex. shipping manager) who has a valid IATA certification!

There are additional Marks needed:
- Shipper and Consignee (Name and Address (Country name has to be in English))
- UN Number and Proper Shipping Name
- Total Quantity (in net weight = kg)
- Lithium Battery Handling Label
- Dangerous Goods Label Class 9 (Dim. 10 x 10 cm)
- Cargo Aircraft only (CAO) Label
- Overpack label if applicable

Additional Documentation:
- A Shipper's Declaration (DGD) and a AWB Entry is required:
  - UN 3090 Lithium metal batteries, PI 968, IB
  - Number of Packagings and net weight of each Package containing Lithium Metal batteries

It is allowed to build Overpacks, but the Total kg net (of all inner packages) has to be marked outside of the Overpack! All inner packages needs also to be marked completely and the OVERPACK Label must be put on the Overpack package.

Example DGD:

No Packing Group No. must be indicated.
Lithium Metal Button Cells

Only Batteries

Classification of the related Packing Instruction:

Renata Lithium Metal Batteries are classified under Section II of PI 968 or under Section IB of PI 968

For further informations to the related packing Instructions please consult the IATA DGR. www.iata.org
Lithium Ion/Polymer Batteries

Choose Transport Mode

Only Batteries
Lithium Ion/Polymer Batteries

Only Batteries

Road Transport (Switzerland/Europe), Rail Transport, Sea Transport

UN-No.: UN 3480
Proper Shipping Name: Lithium ion batteries
Technical Guidelines
ADR / RID 2021
Special Provision 188

According to the SDR/ADR Regulations / RID Regulations (Regulations of Dangerous Goods by Roadtransport) our Lithium Ion Button cells are generally classified as dangerous goods, but can be permitted as “small” Batteries in compliance with the Special Provision 188 and thus considerably shipped relieved.

Technical Guidelines
IMDG Code 2020-2021
(amdt 40-20)
Packing Instruction and Special Provisions
Special Provision 188

According to the IMDG Code (International Maritime Code for Dangerous Goods) our Lithium Ion Button cells are generally classified as dangerous goods, but can be permitted as “small” Batteries in compliance with the Special Provision 188 and thus considerably shipped relieved.

Article Safety Data Sheet
Lithium Ion/Polymer Batteries

Air Transport

<table>
<thead>
<tr>
<th>UN-No.:</th>
<th>UN 3480</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proper Shipping Name:</td>
<td>Lithium ion batteries</td>
</tr>
</tbody>
</table>

According to the IATA DGR Regulations (Air Transport Dangerous Goods Regulations) our Lithium ion/polymer batteries are classified as dangerous goods, but can be permitted in compliance with the above mentioned Instructions and thus considerably shipped relieved.

For further Information press Technical Guidelines

PICTURE

Article Safety Data Sheet

Released: 01.12.2020 – © Renata SA 2020/2021
Lithium Ion/Polymer Batteries

Only Batteries

Packing Instructions 965 - Section II

Cells and Batteries until max. 2.7 Wh
Only Cells and Batteries over 2.7 Wh until max. 20 Wh

It's forbidden to combine Cells and Batteries over 2.7 Wh in one package

FORBIDDEN FOR TRANSPORT ABOARD PASSENGER AIRCRAFT

Only «rigid» Non UN-proven Outerpackaging Materials are allowed to be used for UN 3480

UN 3480, PI 965, Section II. Lithium ion cells and batteries must be offered for transport at a state of charge (SoC) not to exceed 30% of their rated design capacity.

A shipper is not permitted to present for transport more than one (1) package prepared according to Section II in any single consignment.

Not more than one (1) package prepared in accordance with Section II of PI 965 may be placed into an overpack. When the package is placed in an overpack, the lithium battery handling label required by this packing instruction must either be clearly visible or the label must be affixed on the outside of the overpack and the overpack must be marked with the word “Overpack”.

If shipment exceed 2.5 kg net batteries, then ship it under Section IB with a Shipper’s Declaration / DGD! (for further details according to section IB, see next page)
Lithium Ion/Polymer Batteries

Only Batteries

Packing Instruction 965 IB

If the before mentioned lithium content limitations are being exceeded, then it has to be followed the Packing Instructions PI 965, Section IB.

The shipment can only be sent by a person (for ex. shipping manager) who has a valid IATA certification!

There are additional Marks needed:
- Shipper and Consignee (Name and Address (Country name has to be in English))
- UN Number and Proper Shipping Name
- Total Quantity (in net weight = kg)
- Lithium Battery Handling Label
- Dangerous Goods Label Class 9 (Dim. 10 x 10 cm)
- Cargo Aircraft only (CAO) Label
- Overpack Label if applicable

Additional Documentation:
- A Shipper's Declaration (DGD) and a AWB Entry is required:
- UN 3480 Lithium ion batteries, PI 965, IB
- Number of Packagings and net weight of each Package

It is allowed to build Overpacks, but the Total kg net (of all inner packages) has to be marked outside of the Overpack! All inner packages needs also to be marked completely and the OVERPACK Label must be put on the Overpack package.

Example DGD:

Packing Group No. must be indicated.
Lithium Ion/Polymer Batteries

Classification of the related Packing Instruction:

For further informations to the related packing Instructions please consult the IATA DGR, www.iata.org

Renata Lithium Ion Batteries are classified under Section II or under section IB
Zinc Air Button Cells

Choose Transport Mode
Zinc Air Button Cells

Road Transport (Switzerland/Europe)

According to the SDR/ADR Regulations (Regulations of Dangerous Goods by Roadtransport) our 
Zinc Air Button Cells

are not classified as hazardous goods and thus not regulated by above mentioned rules. They 
can be shipped under applying the usual standard packaging rules.

Sea Transport

According to the IMDG Regulations (International Maritime Code for Dangerous Goods) our 
Zinc Air Button cells

are not classified as hazardous goods and thus not regulated by above mentioned rules. They 
can be shipped under applying the usual standard packaging rules.
Zinc Air Button Cells

Air Transport

According to the IATA DGR Regulations (Air Transport Dangerous Goods Regulations) in application of the Special Provision A123, section 4.4 our Zinc Air Button cells are not classified or regulated as a Dangerous Goods. Following information must be showed on the AWB: "Not restricted as per Special Provision A123".

Rail Transport (Europe)

According to the RID Regulations (Regulations of Dangerous Goods by Railtransport) our Zinc Air Button cells are not classified as hazardous goods and thus not regulated by above mentioned rules. They can be shipped under applying the usual standard packaging rules.
FAQ (Frequently Asked Questions)

Where can I get a proof of the UN38.3 Test of Renata Batteries?
A Proof of the passed UN38.3 test can be found on our product specific ASDS, in Section 14 and Annex I.

All UN38.3 Test Summary (TS) can also be downloaded directly on: https://www.renata.com/downloads/

How to calculate the Wh of a Battery?
Nominal Voltage x Capacity in Ampere-hours = Watts per hour
\[ V \times Ah = Wh \quad \text{or} \quad V \times mAh / 1000 = Wh \]

IATA requires, that for Lithium ion batteries over 100 Wh produced after 31. Dezember 2011 the Wh has to be printed on the Battery. For Lithium ion batteries under 100 Wh produced after than 01.01.2009 also the Wh has to be printed on.

What are “Button cells“ and how to treat “Battery Packs“?
Button cells per definition are a “single cell battery“ which the diameter is bigger than the height (also not a battery), a battery has more than one cell.
Button cells containing in equipment (for example in a watch) are not restricted in the IATA DG Regulation; this also includes Overpacks.
A Battery Pack contains more than one battery and is considered as a battery. Example: a “Battery Pack“ with 6 batteries of each 40 Wh equal a total of 240 Wh; therfore, it becomes a regular DG Class 9 Shipment.
FAQ (Frequently Asked Questions)

What are the Dimensions of a Lithium Battery Mark?
Standard: 100 x 100 mm, for small packages the minimum dimension is 100 mm wide x 70 mm high (DGR 7.1.5.5).

Is it possible to use only one Label for Lithium Ion and Lithium Metal together as one?
Yes, but all applicable UN Nr. must be indicate on one or more marks.
The mark must in the appropriate UN Nr. (DGR: 7.1.5.5.2):
- "UN 3090" for Lithium metal cells or batteries;
- "UN 3480" for Lithium ion cells or batteries;
- "UN 3091" for Lithium metal cells or batteries contained in, or packed with, equipment;
- "UN 3481" for Lithium ion cells or batteries contained in, or packed with, equipment.

Is required according to IATA to provide a 24h emergency number for shipments of lithium batteries?
- The DGD must provide an emergency contact, which has to be 24h reachable in case of an emergency.
- The Lithium Battery Mark (see above) must be provide a telephone number for additional information (no need to be 24h reachable).
FAQ (Frequently Asked Questions)

When is none lithium (metal -or- ion) battery label or marks necessary on the package and neither is necessary to declare the containing of Dangerous goods on the Air Waybill (AWB) and a DGD is not required?
- Packages containing only Renata SA button cell installed in equipment; or
- Consigments of maximum two packages or less where each package contains no more than 4 Renata SA button cells or two batteries installed in equipment.
(Lithium metal/ion batteries contained in equipment - UN3091 - PI 970 / UN3481 - PI967, Section II)

What are the Dimensions of a CAO Label?

What are the Dimensions of a Class 9 Lithium Batteries Label?

IATA DGR FIGURE 7.3.X
FAQ (Frequently Asked Questions)

What are the packaging limitation of the Packing Instructions 966 / 969 Section II?

Lithium Ion Batteries packed with equipment - PI 966 - Section II (Cells ≤ 20 Wh and Batteries ≤ 100 Wh)
Lithium Metal Batteries packed with equipment PI 969 Section II (Cells ≤ 1 gram and Batteries ≤ 2 grams)

a) Cells or Batteries are packed in the same package but not built-in equipment.
b) Cells or Batteries are contained in equipment, separately with 2 spare sets* of cells or batteries per equipment.
c) Total net weight of lithium cells/ batteries contained in any package do not must to exceed 5 kg.

Example:
In one package are packed 3 equipments, each equipment contain one button-cell (build-in equipment) plus two sets of cell-replacement per equipment.

This means that is possible to combine “contained in“ and “packed with“ shipments?
Eg: A watch containing a battery plus 2 replacement batteries
Yes, therefore must be follow previous PI 966/PI 969.

For only build-in cells/batteries please see next page.

*A "set" of cells or batteries is the number of individual cells/batteries that are required to power each piece of equipment.
FAQ (Frequently Asked Questions)

What are the packaging limitation of Packing Instructions 967 / 970 Section II?
Lithium Ion Batteries contained in equipment - PI 967 - Section II (Cells ≤ 20 Wh and Batteries ≤ 100 Wh)
Lithium Metal Batteries contained in equipment - PI 970 - Section II (Cells ≤ 1 gram and Batteries ≤ 2 grams)

a) Cells or Batteries which are integrated in equipment in order to provide electrical power for its operation.
b) The equipment containing the cell must be secure against movements within the outer-packaging and it
must be effectively prevent any accidental activation.
c) Total net weight of lithium cells/batteries contained in any package do not must to exceed 5 kg.

Is it allowed to make Overpack(s) with Lithium Cells/Batteries (air freight shipments - IATA DGR)?
Yes. Restrictions or limitation must be verified and followed corresponding the Packaging Instructions of each UN Nr.
- The allowed maximum nett weight of batteries/cells must be considered in each inner-package.
- An Overpack can contain packages of different dangerous goods but do not have to contain substances that
might react dangerously with each other. Verify table 9.3.A DGR

As a Battery Manufacturer do we need a Quality management programm to ship Lithium Batteries?
Yes, according to IATA DGR -> 3.9.2.6 and ADR/RID/IMDG SV188 -> 2.2.9.1.7 e) a quality management programm
is required. Renata SA is a ISO 9001 qualified company.

The latest ISO certificate can be downloaded from our website:
Does IATA require Safety Data Sheet (SDS) for our batteries?
No, but some airlines, forwarders or our clients may would like to have it as a reference.
For our Renata SA button cells or batteries a SDS is not a requirement according to the Occupational Safety and Health Administration (OSHA) Hazard Communication Standard 29 CFR Subpart 1910.1200, because these products are 'articles' that do not release a covered toxic chemical under the normal conditions of processing or use.

You can find the SDS in our Website or under below links: [https://www.renata.com/downloads/](https://www.renata.com/downloads/)

- Article Safety Data Sheet Lithium Metal Button Cells
- Article Safety Data Sheet Lithium Ion/Polymer Batteries
Lithium Metal Button Cells & Lithium Ion/Polymer Batteries

Store unused batteries in their original packaging and keep them away from metal objects which may short-circuit them. Storing unpackaged cells together could result in cell shorting and heat build-up. Store and display batteries in their original packaging in well ventilated, dry and cool conditions. Avoid storing or display batteries in direct sun or in places where they get exposed to rain.

Do not stack battery cartons on top of each other exceeding a specified height. The height is clearly dependent on the strength of the packaging. As for general rule this height should not exceed 1.5 m for cardboard packages or 3 m for wooden cases. The above recommendations are equally valid for storage conditions during prolonged transit. Thus, batteries should be stored away from ship engines and not left for long periods in unventilated metal box cars (containers) during summer.

Taken from our ASDS
You can contact us as follows:

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E-Mail: logistics@renata.com

This manual was established in cooperation with

Air Cargo & Dangerous Goods
Training & Consulting