TRANSPORT OF LITHIUM CELLS / BATTERIES ON CARGO AIRCRAFT ONLY (CAO) WHICH REQUIRE AN APPROVAL

Approval ref.

granted by

as State of Origin in accordance with

☐ **Special Provision A88**
☐ **Special Provision A99**
☐ **Special Provision A331 related to UN 3480**
☐ **Specific Approval for UN 3481 cells/batteries with a state of charge higher than 30%**
☐ **PI 950, 951, 952 related to UN 3166/3171 untested 38.3 batteries or**
☐ **in accordance with**

as defined in ICAO Annex 18 and Technical Instructions for the safe transport of dangerous goods by air (Doc 9284)

☐ **UN 3090** ☐ **UN 3091** ☐ **UN 3480** ☐ **UN 3481** ☐ **UN 3166** ☐ **UN 3171**

Validity period of the approval:	12 months, from	to	,unless amended [1], suspended or revoked

A/ Applicant [2]

Company name:	
Organization/administrative number (if applicable):	
Address:	Tel: E-mail:
Responsible contact person Full name: Title: Tel: E-mail: Responsibilities in the applicant organization:	
I confirm that the responsible contact person mentioned above ☐ holds a valid and appropriate dangerous goods training qualification ☐ uses and complies with the valid edition of the following dangerous goods standards: ICAO Technical Instructions (or IATA Dangerous Goods Regulations) + ICAO Technical Instructions Supplement If the Applicant is also the Shipper, I confirm that personnel signing the dangerous goods transport document (shipper's declaration) ☐ holds a valid and appropriate dangerous goods training qualification and is in a position to verify that all requirements are met ☐ uses and complies with the valid edition of the following dangerous goods standards: ICAO Technical Instructions (or IATA Dangerous Goods Regulations) + ICAO Technical Instructions Supplement ☐ uses packaging complying with the appropriate Packing Instruction [3]	

[1] Refer to Appendix I paragraphs 4 and 5
[2] Applicant: entity applying for the approval (approval holder) (e.g. manufacturer, integrator, research center, medical organization, design, office, shipper, ...)
[3] PI 910 regarding SP A88, PI 974 regarding SP A99, PI 950/951/952 regarding UN 3166/3171

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B/ Reason for requesting the approval

☐ Pre-production prototypes batteries or when transported for testing [4]

☐ Low production runs (i.e. annual production runs consisting of not more than 100 lithium cells or batteries) of batteries or cells that have not been tested to the requirements in Part III, subsection 38.3 of the UN Manual of Tests and Criteria

☐ Other (provide detail below)

Additional information related to the above selection AND purpose of the transport:

C/ Shipper (if not the applicant) [5]

Company name:	
Organization/administrative number (if applicable):	
Address:	Tel: E-mail:

I confirm that personnel signing the dangerous goods transport document (shipper's declaration)

☐ holds a valid and appropriate dangerous goods training qualification and is in a position to verify that all requirements are met

☐ uses and complies with the valid edition of the following dangerous goods standards: ICAO Technical Instructions (or IATA Dangerous Goods Regulations) + ICAO Technical Instructions Supplement

☐ uses packaging complying with the appropriate Packing Instruction [3]

[4] Testing includes, but is not limited to, testing described in the Manual of Tests and Criteria, part III sub-section 38.3, integration testing and product performance testing

[5] In some cases, the applicant and shipper are not the same entities.

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D/ Identification of ☐ cell or ☐ battery, and ☐ equipment/vehicle if UN3091/3481/3166/3171

Manufacturer name (of the cell/battery):
(if not the applicant)

Address:

Model name/reference:

Weight (kg):

Dimension (mm x mm x mm):

Total energy (Wh) or Total lithium content (kg):

Voltage (V):

Capacity (Ah):

ONLY for UN 3091/3481/3166/3171

Manufacturer name of the equipment/vehicle:
(if not the applicant)

Address:

Model name/reference of the equipment/ vehicle:

Number of cells or batteries contained in the equipment/vehicle or shipped with:

Weight of the equipment/vehicle (kg):

Dimension of the equipment/vehicle (mm x mm x mm):

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E/ Identification of packaging (if equipment/vehicle: adapt the answer)

Description and reference of outer packaging: Packaging test certificate reference of outer packaging where applicable:
Description of inner packaging and interior material (fireproof etc.) (if any):
Number of cells or batteries per outer package: Net weight per shipment (kg):

F/ Conditions of transport (in addition to general measures: refer to Appendix I)

State of charge of the cell / battery:

G/ Document supporting the application (refer to Appendix II)

Reference and date of the document:

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H/ Identification of the person completing this application

Personnel of the applicant:

☐ Yes ☐ No

Name: Title:	Tel: E-mail:
Company name: [6] (if not the applicant) Billing address: (if not the same as above)	Address:

I declare that

- ☐ to the best of my knowledge the particulars entered on this document are accurate
- ☐ I hold a valid and appropriate dangerous goods training qualification and is in a position to verify that all requirements are met
- ☐ I use and comply with the valid edition of the following dangerous goods standards: ICAO Technical Instructions (or IATA Dangerous Goods Regulations) + ICAO Technical Instruction Supplement
- ☐ the conditions set in this approval will be fully complied with

Date: Signature:

I/ Authority:

Name:

Title:

Date:

Signature:

[6] Entity acting on behalf of the applicant, who is appointed and authorized by the applicant to complete and sign the application form

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APPENDIX I

1- This approval is granted by the State of Origin.

2- An approval issued by the State of the Operator is requested prior any transport by air and it must accompany the shipment.

3- The transport by air is subject to the acceptance of the air operator (that holds a dangerous goods approval granted by its State) and may be subject to additional conditions. Those additional conditions may be set by the air operator or the State of the operator.

4- The cell or battery shall be carried in accordance with ICAO Technical Instructions and all conditions set in the approval.
Note: 'Technical Instructions' means the latest effective edition of the 'Technical Instructions for the safe transport of dangerous goods by air' (Doc 9284), including the supplement and any addenda or corrigenda, approved and published by the International Civil Aviation Organization.

5- The holder of this approval must notify the State of Origin before transport if any of the criteria, elements and conditions set in this approval are modified or changed. This also applies if the compliance of the applicable requirements is affected by regulatory changes. A new approval may be required.

6- The present approval may be limited, suspended revoked at any time by the State of Origin if the operating conditions specified in the present approval are not met or if the level of safety specified by the regulation is not achieved.

7- A copy of this approval must be referenced in and attached to the dangerous goods transport document (shipper's declaration).

8- Lithium ion cells and batteries (UN 3480 and UN 3481) must be offered for transport at a state of charge not exceeding 30 per cent of their rated capacity unless a higher state of charge is specifically approved by the State of Origin and the State of Operator. For UN 3480, the provisions of SP A331 apply. For UN 3481, the provisions of SP A331 can be utilised by the State of Origin and Operator

9- Cells that are not UN 38.3 tested, the following tests have to be performed as a minimum: test T.1 altitude simulation (pressure), test T.2 thermal and test T.3 vibration as specified in UN Manual of tests and criteria, § 38.3.4. These tests could be performed in-house or in any other company able to accomplish such tests, no special certification for the test companies being needed. The corresponding report must be submitted by the applicant.

10- Applicable ☐ Not applicable ☐
Five working days before each transport performed in accordance with this approval, the following must be sent to the State of Origin:

- a copy of the dangerous goods transport document (shipper's declaration) which includes an emergency phone number which will be available 24 hours a day, 7 days a week, from which to obtain details of emergency response measures appropriate to the consignment, and
- a copy of the dangerous goods training record (e.g. ICAO category 1 of personnel/staff) of the person signing the dangerous goods transport document (shipper's declaration) valid during the period of validity of the approval, Note: The signatory must be a personnel of the company identified as shipper in this approval.

11- Additional requirements (if any) set by the issuing authority:

APPENDIX II

ITEM N°	DOCUMENTS TO BE PROVIDED BY THE APPLICANT
1	the completed application form (to be submitted in electronic pdf format)
2	a document supporting the application (see details below)

Document supporting the application

The document must contain the following information.

0. Reference/date (this information will be set in paragraph G) **and signature** of the applicant/applicant representative

1. Delegation letter
In case the applicant appoints a representative, a letter from the applicant delegating authority to this representative to make the application on its behalf and which attests that this representative is qualified to make the application

2. Training record
a) Applicant: a copy of the dangerous goods training record of the responsible contact person
b) Applicant representative: in case the applicant appoints a representative, a copy of the dangerous goods training record of person completing this application on behalf of the applicant mentioned in Paragraph 1 here above

3. Description and characteristics of cell, battery and equipment/vehicle

3.1 Cell [7] (single encased electrochemical unit)
a) Manufacturer (if other than applicant)
b) Designation/reference of the cell
c) Weight and dimension of the cell
d) Energy (Wh) for lithium ion / Lithium content (kg) for lithium metal, voltage (V), capacity (Ah) of the cell
e) SDS [8] (if available)
f) Description of the protection against external short circuits
g) Description of the safety device (e.g. ventilation system)
h) Test report [9] (if not UN 38.3 tested, refer to item 9 Appendix I)

3.2 Battery (two or more cells which are electrically connected together and fitted with devices necessary for use, for example, case, terminals, marking and protective devices)
a) Manufacturer (if other than applicant): name, address and contact
b) Designation/reference of the battery
c) Configuration:
   i. in case of modules/packs/assemblies (named modules in the document) constituting the battery: number of cells per module, number of modules per battery, certificate of the UN 38.3 test report of the module or test summary [8] if tested, interconnection of cells and modules (parallel and series connections)
   ii. in case of cells only constituting the battery: number of cells, interconnection of cells (parallel and series connections)
d) Cells constituting the battery
   i. Manufacturer (if other than applicant)
   ii. Designation/reference of the individual cell
   iii. Weight and dimension of the individual cell
   iv. Energy (Wh) for lithium ion / Lithium content (kg) for lithium metal, voltage (V), capacity (Ah) of the individual cell
   v. Certificate of the UN 38.3 test report or test summary [8] (if not UN 38.3 tested, refer to item 9 Appendix I)
   vi. SDS [8] (if available)

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[7] If the application/approval relates to a battery, go to § 3.2
[8 + 9] to be provided

vii. Description of the protection against external short circuits
viii. Description of the safety device (e.g. ventilation system)

e) Weight and dimension of the battery
f) Total energy (Wh) for lithium ion / Total lithium content (kg) for lithium metal, voltage (V), capacity (Ah) of the battery
g) Schematic drawing/illustrated picture of the battery
h) SDS [8] (if available)
i) Description of the effective means of preventing reverse current flow (e.g. diodes, fuses, etc.)
j) Description of the protection against external short circuits
k) Description of the safety device (e.g. ventilation system)

3.3 Equipment/vehicle (only for UN 3091/3481/3171/3166) in addition to data requested in 3.1 or in 3.2

a) Manufacturer of the equipment/vehicle (if other than applicant)
b) Designation/reference of the equipment/vehicle
c) Number / location of batteries (or cells if the transport concern cells only) contained in the equipment/vehicle or shipped with
d) Weight and dimension of the equipment/vehicle
e) Schematic drawing/illustrated picture of the location of the battery

3.4 Statement confirming the safety of the cell/battery at the state of charge

4 Quality system

Evidence that the battery production is manufactured under a quality management programme in compliance with ICAO-TI 2;9.3 e), adapted to the size of the applicant, e.g. ISO certificate, list of procedures, description of process, work processing, ….

5 Compliance checklist (C/L)

The following table shall ensure that all ICAO TI requirements, possibly related to this approval, are fulfilled.

REQUIREMENTS	*COMPLIANCE (*)*
Part 2, Chapter 9, § 9.3, a), b), c), d), e), f), g)	
SP A48 *(specific UN3481)*	
SP A88	
SP A154	
SP A164	
SP A181 *(specific UN3481)*	
SP A183 *(specific UN3480)*	
SP A185 *(specific UN3481)*	
SP A201 *(specific UN3480)*	
SP A206	
SP A213	
SP A220 *(specific UN3481)*	
SP A331 *(specific UN3480)*	
SP A334 *(specific UN3480)*	
PI 910 (specific to SP A88)	
PI 974 (specific to SP A99)	
PI 950 (paragraph related to lithium)	
PI 951 (paragraph related to lithium)	
PI 952 (paragraph related to lithium)	

** Note: a) If some requirements are not applicable, indicate N/A in the right-hand column, justify)*
b) Some answers can refer to information provided in above mentioned paragraphs

6 Approval issued by another European State of origin for the same cell or battery UN3090/3480 and same equipment/vehicle for UN3091/3481/3171/3166 and the same shipment