

**Multilateral Agreement M 354
under section 1.5.1 of ADR
on the carriage of
SODIUM-ION BATTERIES with organic electrolyte or
SODIUM-ION BATTERIES with organic electrolyte
CONTAINED IN EQUIPMENT OR PACKED WITH EQUIPMENT**

- (1) By derogation from the provisions of 3.2.1 of ADR (Table A, Dangerous Goods List), sodium-ion batteries, including sodium-ion cells, may be carried as UN 3551 SODIUM-ION BATTERIES with organic electrolyte or UN 3552 SODIUM-ION BATTERIES CONTAINED IN EQUIPMENT or PACKED WITH EQUIPMENT, with organic electrolyte, under the conditions specified in this Multilateral Agreement, provided the applicable construction and testing requirements set out in this Multilateral Agreement are complied with.
- (2) Cells and batteries, cells and batteries contained in equipment or cells and batteries packed with equipment containing sodium ion, which are a rechargeable electrochemical system where the positive and the negative electrode are both intercalation or insertion compounds, constructed with no metallic sodium (or sodium alloy) in either electrode and with an organic, non aqueous compound as electrolyte, shall be assigned to UN No. 3551 or 3552, as appropriate.

NOTE: Intercalated sodium exists in an ionic or quasi-atomic form in the lattice of the electrode material.

They may be carried under these entries if they meet the following provisions:

- (a) Each cell or battery is of the type proved to meet the requirements of applicable tests of the Manual of Tests and Criteria (S/SG/AC.10/11/Rev.8), Part III, sub-section 38.3;
- (b) Each cell and battery incorporates a safety venting device or is designed to preclude a violent rupture under conditions normally encountered during carriage;
- (c) Each cell and battery is equipped with an effective means of preventing external short circuits;
- (d) Each battery containing cells or series of cells connected in parallel is equipped with effective means as necessary to prevent dangerous reverse current flow (e.g., diodes, fuses, etc.);
- (e) Cells and batteries shall be manufactured under a quality management program as prescribed under 2.2.9.1.7 (e) (i) to (ix);
- (f) Manufacturers and subsequent distributors of cells or batteries shall make available the test summary as specified in the Manual of Tests and Criteria, Part III, sub-section 38.3, paragraph 38.3.5.

- (3) SODIUM-ION BATTERIES and SODIUM-ION CELLS WITH ORGANIC ELECTROLYTE or SODIUM-ION BATTERIES and SODIUM-ION CELLS WITH ORGANIC ELECTROLYTE CONTAINED IN EQUIPMENT or PACKED WITH EQUIPMENT shall be deemed to be articles of Class 9, classification code M4; the tunnel restriction code to be used shall be "E".
- (4) Special provisions 188, 230, 310, 348, 376, 377, 384 and 667 in 3.3.1 of ADR shall be applicable, reading "sodium-ion" in place of "lithium-ion".
- (5) Labelling in accordance with 5.2.2 shall be done using the dangerous goods label conforming to model 9A. When special provision 188 is applied, packagings shall bear the lithium battery mark in accordance with figure 5.2.1.9.2 of ADR. Marking without indicating the UN number shall also be permitted.
- (6) Packing instructions P903, P908, P909, P910, P911, LP903, LP904, LP905 and LP906 in 4.1.4.1 of ADR shall be applicable, reading "sodium-ion" in place of "lithium-ion".
- (7) The consignor shall enter the following in the transport document:
- "CARRIAGE IN ACCORDANCE WITH MULTILATERAL AGREEMENT M 354".
- (8) All other relevant provisions of ADR shall be met.
- (9) Sodium-ion cells and batteries as well as sodium-ion cells and batteries contained in equipment or packed with equipment as prepared and offered for carriage shall not be subject to other provisions of ADR if they meet the following provisions:
- (a) The cell or battery is short-circuited in such a way that the cell or battery does not contain electrical energy. The short-circuiting of the cell/battery is easily verifiable (e.g. busbar between terminals);
- (b) Each cell or battery meets the provisions of paragraph (2) (a), (b), (d), (e) and (f);
- (c) Each package is marked in accordance with 5.2.1.9 of ADR;
- (d) Except when cells or batteries are installed in equipment, each package shall be capable of passing a 1.2 m drop test in any orientation without damage to the cells or batteries contained therein, without shifting of the contents so as to allow battery to battery (or cell to cell) contact and without release of contents;
- (e) Cells and batteries installed in equipment shall be protected against damage. When batteries are installed in equipment, the equipment shall be packed in strong outer packagings constructed of suitable material of adequate strength and design in relation to the packaging's capacity and its intended use, unless the battery is afforded equivalent protection by the equipment in which it is contained;
- (f) Each cell, including if it is a component of a battery, shall only contain dangerous goods carried in accordance with the provisions of Chapter 3.4 and in a quantity not exceeding the quantity specified in Column (7a) of Table A of Chapter 3.2;
- (g) During carriage, an accompanying document shall be carried on board containing the following information:

"CARRIAGE IN ACCORDANCE WITH MULTILATERAL AGREEMENT M 354 (9)".

(10) This Agreement shall be valid until 30 June 2025 for carriage on the territories of the ADR Contracting Parties signatory to this Agreement. If it is revoked before that date by one of the signatories, it shall remain valid until the above mentioned date only for carriage in the territories of those ADR contracting parties signatory to this Agreement which have not revoked it.

Bonn, 27 June 2023

The competent authority for ADR
of the Federal Republic of Germany

The Federal Ministry for
Digital and Transport