

## MULTILATERAL AGREEMENT M 228

### under Section 1.5.1 of ADR concerning the carriage of pre-production prototypes of large Lithium-ion batteries assemblies (UN 3480)

(1) By derogation from special provision 310 in chapter 3.3, pre-production prototypes of large Lithium-ion batteries assemblies, not tested according to sub-section 38.3 of the manual of tests and criteria, with a gross mass exceeding 100 kg, conforming to the requirements mentioned in paragraph (2) hereafter, may be carried in strong, non approved according to chapter 6.1 packagings, conforming to paragraph (3) hereafter.

(2) Construction of the battery assembly:

- The elementary battery modules or cells shall be assembled in an insulated and sturdy structure that protects the cells mechanically, and attached in this structure in such a way that no movement is possible;
- Each module or cell shall be rigidly and strongly attached inside a sturdy cabinet or casing, made of metal or a composite material of equivalent strength, with full sheet panels of adequate strength and design in relation to the intended use of the cabinet or casing and to the mass of the elements contained inside.

(3) The packaging shall conform to the following requirements:

(a) If the battery assembly is to be transported vertically:

- The battery assembly shall be placed in an inner packaging consisting in a heat sealable aluminium foil bag and wrapped into enough non-combustible absorbent cushioning material to avoid any accidental leakage from the battery system out of the package;
- The battery assembly shall be strongly attached to a pallet through dampers capable of minimising the effect of shocks or vibrations, allowing handling, lifting, and tilting to the point of toppling, without rupture;
- The pallet is forming the bottom of the outer packaging consisting in a strong box made of plywood, plastic or metal, respectively conforming to construction requirements of 6.1.4.10, 6.1.4.13, or 6.1.4.14;
- A material with a minimum thickness of 40 mm, that is insulating and non-combustible, shall be placed between the inner packaging and the outer packaging, and shall be strongly attached to their walls;
- The outer packaging shall be marked with package orientation arrows according to sub-section 5.2.1.9 of ADR.

(b) If the battery assembly is to be transported horizontally:

- The battery assembly shall be placed in an inner packaging consisting in a heat sealable aluminium foil bag;
- The battery assembly and its packaging sheet shall be placed in a strong box made of plywood, plastic or metal, respectively conforming to construction requirements of 6.1.4.10, 6.1.4.13, or 6.1.4.14, in which it is held in a way that no movement is possible in the packaging, and shall be wrapped in enough non-combustible absorbent cushioning material to avoid any accidental leakage from the battery assembly out of the package;
- The box containing the battery assembly shall be placed in an outer packaging made of plywood, plastic or metal, respectively conforming to construction requirements of 6.1.4.10, 6.1.4.13, or 6.1.4.14, and kept separate from the packaging by dampers, capable of minimising the effect of shocks or vibrations, spread all around it;
- A material that is insulating and non-combustible shall be placed between the inner box and the outer box.

(4) In this agreement, the term “non-combustible” refers to a definition set by an appropriate standard recognised in the country of packing (e.g. the EN 13 501 - 1 standard in the European Union).

(5) All the other provisions of ADR relating to the carriage of Lithium-ion batteries (UN 3480) shall apply.

(6) This agreement shall apply to transport between Contracting Parties to ADR which have signed this agreement up to 26 December 2015 unless it is revoked before that date by at least one of the signatories, in which case it shall remain applicable only to transport between the Contracting Parties to ADR which have signed but not revoked this agreement, on their territory, up to that date.

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The competent authority for ADR  
in France

Pour le ministre par délégation :  
L'ingénieur général des mines,

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