

Special Provisions for Lithium Batteries Being Transported for Disposal or Recycling

ADGC Edition 2.9

- 188 Cells and batteries offered for transport are not subject to other provisions of this Code if they meet the following:
- (a) For a lithium metal or lithium alloy cell, the lithium content is not more than 1 g, and for a lithium ion or sodium ion cell, the Watt-hour rating is not more than 20 Wh;
 - (b) For a lithium metal or lithium alloy battery the aggregate lithium content is not more than 2 g, and for a lithium ion or sodium ion battery, the watt-hour rating is not more than 100 Wh. Lithium ion and sodium ion batteries subject to this provision must be marked with the watt-hour rating on the outside case, except lithium ion batteries manufactured before 1 January 2009;
 - (c) Each lithium cell or battery meets the provisions of 2.9.4 (a), (e), (f) if applicable and (g) or for sodium ion cells or batteries, the provisions of 2.9.5 (a), (e) and (f) shall apply;
 - (d) Cells and batteries, except when installed in equipment, must be packed in inner packagings that completely enclose the cell or battery. Cells and batteries must be protected so as to prevent short circuits. This includes protection against contact with electrically conductive material within the same packaging that could lead to a short circuit. The inner packagings must be packed in strong outer packagings which conform to the provisions of 4.1.1.1, 4.1.1.2, and 4.1.1.5;
 - (e) Cells and batteries when installed in equipment must be protected from damage and short circuit, and the equipment must be equipped with an effective means of preventing accidental activation. This requirement does not apply to devices which are intentionally active in transport (radio frequency identification (RFID) transmitters, watches, sensors, etc.) and which are not capable of generating a dangerous evolution of heat. When batteries are installed in equipment, the equipment must 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 package shall be marked with the appropriate lithium or sodium ion battery mark, as illustrated at 5.2.1.9;

NOTE: Packages containing lithium batteries packed in conformity with the provisions of Part 4, Chapter 11, packing instructions 965 or 968, Section IB of the ICAO Technical Instructions for the Safe Transport of Dangerous Goods by Air that bear the mark as shown in 5.2.1.9 (lithium battery mark) and the label shown in 5.2.2.2.2, Model No.9A shall be deemed to meet the provisions of this special provision.

This requirement does not apply to:

- (i) packages containing only button cell batteries installed in equipment (including circuit boards); and
- (ii) packages containing no more than four cells or two batteries installed in equipment, where there are not more than two packages in the consignment.

When packages are placed in an overpack, the lithium or sodium battery mark shall either be clearly visible or be reproduced on the outside of the overpack and the overpack shall be marked with the word "OVERPACK". The lettering of the "OVERPACK" mark shall be at least 12 mm high.

- (g) Except when cells or batteries are installed in equipment, each package must be capable of withstanding a 1.2 m drop test in any orientation without damage to 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;
- (h) Except when cells or batteries are installed in or packed with equipment, packages

must not exceed 30 kg gross mass.

As used above and elsewhere in this Code, "lithium content" means the mass of lithium in the anode of a lithium metal or lithium alloy cell. As used in this special provision "equipment" means apparatus for which the lithium cells or batteries will provide electrical power for its operation.

Separate entries exist for lithium metal batteries and lithium ion batteries to facilitate the transport of these batteries for specific modes of transport and to enable the application of different emergency response actions.

A single cell battery as defined in Part III, sub-section 38.3.2.3 of the Manual of Tests and Criteria is considered a "cell" and shall be transported according to the requirements for "cells" for the purpose of this special provision.

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Lithium ion, lithium metal or sodium ion cells or batteries identified as being damaged or defective such that they do not conform to the type tested according to the applicable provisions of the Manual of Tests and Criteria must comply with the requirements of this special provision.

For the purposes of this special provision, these may include, but are not limited to:

- Cells or batteries identified as being defective for safety reasons;
- Cells or batteries that have leaked or vented;
- Cells or batteries that cannot be diagnosed prior to transport; or
- Cells or batteries that have sustained physical or mechanical damage.

NOTE: *In assessing a cell or battery as damaged or defective, an assessment or evaluation must be performed based on safety criteria from the cell, battery or product manufacturer or by a technical expert with knowledge of the cell's or battery's safety features. An assessment or evaluation may include, but is not limited to, the following criteria:*

- (a) *Acute hazard, such as gas, fire, or electrolyte leaking;*
- (b) *The use or misuse of the cell or battery;*
- (c) *Signs of physical damage, such as deformation to cell or battery casing, or colours on the casing;*
- (d) *External and internal short circuit protection, such as voltage or isolation measures;*
- (e) *The condition of the cell or battery safety features; or*
- (f) *Damage to any internal safety components, such as the battery management system.*

Cells and batteries must be transported according to the provisions applicable to UN Nos.3090, 3091, 3480, 3481, 3551 and 23352, as appropriate, except special provision 230 and as otherwise stated in this special provision.

Cells and batteries must be packed in accordance with packing instructions P908 of 4.1.4.1 or LP904 of 4.1.4.3, as applicable.

Cells and batteries identified as damaged or defective and liable to rapidly disassemble, dangerously react, produce a flame or a dangerous evolution of heat or a dangerous emission of toxic, corrosive or flammable gases or vapours under normal conditions of transport shall be packed and transported in accordance with packing instruction P911 of 4.1.4.1 or LP906 of 4.1.4.3, as applicable. Alternative packing and/or transport conditions may be authorized by the competent authority.

Packages shall be marked "DAMAGED/DEFECTIVE" in addition to the proper shipping name, as stated in 5.2.1.

The transport document shall include the following statement "Transport in accordance with special provision 376".

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Lithium ion and lithium metal or sodium ion cells and batteries and equipment containing such cells and batteries transported for disposal or recycling, either packed together with or packed without non-lithium or non-sodium batteries, may be packaged in accordance with packing instruction P909 of 4.1.4.1.

These cells and batteries are not subject to the requirements of section 2.9.4. Additional exemptions may be provided under the conditions defined by modal transport regulations.

Packages must be marked "LITHIUM BATTERIES FOR DISPOSAL", "SODIUM ION BATTERIES FOR DISPOSAL", "LITHIUM BATTERIES FOR RECYCLING" or "SODIUM ION BATTERIES FOR RECYCLING", as appropriate.

Identified damaged or defective batteries must be transported in accordance with special provision 376.

384 The label to be used is Model No 9A, see 5.2.2.2.2. However, for placarding of cargo transport units, the placard shall correspond to Model No 9.