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**Committee of Experts on the Transport of Dangerous Goods  
and on the Globally Harmonized System of Classification  
and Labelling of Chemicals**

**Sub-Committee of Experts on the Transport of Dangerous Goods**

**Report of the Sub-Committee of Experts on the Transport of  
Dangerous Goods on its forty-fifth session**

held in Geneva from 23 June to 2 July 2014

**Addendum**

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## Annex I

## Draft amendments to the 18th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations

### Chapter 1.2

In the definition of *Salvage pressure receptacle* replace “1 000” by “3 000”.

(Reference document: ST/SG/AC.10/C.3/2014/16)

### Chapter 2.3

2.3.2.2 Amend sub-paragraph (a) to read as follows:

“(a) The viscosity<sup>1</sup> and flash-point are in accordance with the following table:

Kinematic viscosity (extrapolated) v (at near-zero shear rate) mm <sup>2</sup> /s at 23°C	Flow-time t in seconds	Jet diameter (mm)	Flash-point, closed-cup (°C)
20 < v ≤ 80	20 < t ≤ 60	4	above 17
80 < v ≤ 135	60 < t ≤ 100	4	above 10
135 < v ≤ 220	20 < t ≤ 32	6	above 5
220 < v ≤ 300	32 < t ≤ 44	6	above -1
300 < v ≤ 700	44 < t ≤ 100	6	above -5
700 < v	100 < t	6	No limit

“

Footnote 1 reads as follows:

<sup>1</sup> *Viscosity determination: Where the substance concerned is non-Newtonian, or where a flow-cup method of viscosity determination is otherwise unsuitable, a variable shear-rate viscometer shall be used to determine the dynamic viscosity coefficient of the substance, at 23°C, at a number of shear rates. The values obtained are plotted against shear rate and then extrapolated to zero shear rate. The dynamic viscosity thus obtained, divided by the density, gives the apparent kinematic viscosity at near-zero shear rate.*”

Renumber existing footnote 1 in 2.3.4 as footnote 2.

(Reference document: ST/SG/AC.10/C.3/2014/38)

### Chapter 3.2, Dangerous goods list

For UN No. 1950, in column (8), replace “LP02” by “LP200” and insert “381” in column (6).

(Reference document: informal document INF.33)

For UN No. 2813, all entries, in column (9), delete “PP83”.

(Reference document: ST/SG/AC.10/C.3/2014/43)

For UN Nos. 2977 and 2978, in column (4), insert “6.1”.

(Reference document: ST/SG/AC.10/C.3/2014/60)

For UN Nos. 3091 and 3481, insert “310” in column (6).

(Reference document: informal document INF.62/Rev.1)

For UN No. 3170, in column (10) delete “BK1”.

(Reference document: informal document INF.54)

For UN No. 3269, packing groups II and III, in column (2) add the following text at the end of the description: “, liquid base material”.

(Reference document: informal document INF.59)

For UN No. 3507, in column (3), replace “8” by “6.1” and in column (4), insert “8”. In column (8), replace “P805” by “P603”.

(Reference document: ST/SG/AC.10/C.3/2014/60)

Add the following entries as follows:

(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
3527	POLYESTER RESIN KIT, solid base material	4.1		II	236 340	5kg	E0	P412			
3527	POLYESTER RESIN KIT, solid base material	4.1		III	236 340	5kg	E0	P412			

*Consequential amendment to the Guiding principles:*

*In part 3, in the table “Methodology for determining limited quantities”, in table note d, add “For UN No. 3527: 5kg/30kg”.*

(Reference document: informal document INF.59)

### Chapter 3.3

3.3.1 Add the following second sentence: “Where a special provision includes a requirement for package marking, the provisions of 5.2.1.2 (a)-(d) shall be met. If the required mark is in the form of specific wording indicated between speech marks (”), such as “Damaged Lithium Batteries”, the size of the mark shall be at least 12 mm, unless otherwise indicated in the special provision or elsewhere in these Regulations.”

(Reference document: ST/SG/AC.10/C.3/2014/58 as amended)

3.3, SP204 At the end, add a new paragraph to read as follows:

“Articles containing smoke-producing substance(s) toxic by inhalation according to the criteria for Division 6.1 shall be labelled with a “TOXIC” subsidiary risk label (Model No 6.1, see 5.2.2.2.2).”.

(Reference document: ST/SG/AC.10/C.3/2014/3 as amended)

3.3, SP236 Amend to read as follows:

“SP 236 Polyester resin kits consist of two components: a base material (either Class 3 or Division 4.1, packing group II or III) and an activator (organic peroxide). The organic peroxide shall be type D, E, or F, not requiring temperature control. The packing group shall be II or III, according to the criteria of either Class 3 or Division 4.1, as appropriate,

applied to the base material. The quantity limit shown in column 7a of the Dangerous Goods List of Chapter 3.2 applies to the base material.”.

(Reference document: informal document INF.59)

SP244 Add the following paragraphs at the end:

“Before loading, these by-products shall be cooled to ambient temperature, unless they have been calcined to remove moisture. Cargo transport units containing bulk loads shall be adequately ventilated and protected against ingress of water throughout the journey.

Notwithstanding the provisions of 4.3.2.2, sheeted bulk containers (BK1) may be used for inland transport.”.

(Reference document: informal document INF.54)

3.3, SP310 Amend to read as follows:

“310 The testing requirements in Chapter 38.3 of the Manual of Tests and Criteria do not apply to production runs consisting of not more than 100 cells and batteries, or to pre-production prototypes of cells and batteries when these prototypes are transported for testing, if the following conditions are met:

- (a) Cells and batteries including when packed with equipment:
  - (i) The cells or batteries are transported in an outer packaging that is a metal (1A, 1B, 1N), plastics (1H) or plywood (1D) drum or a metal (3A, 3B) or plastics (3H) jerrican or a metal (4A, 4B, 4N), plastics (4H) or wooden (4C, 4D, 4F) box or a metal (50A, 50B, 50N), plastics (50H) or wooden (50C, 50D, 50F) large packaging that meets the requirements of 4.1.1.3 at the packing group II performance level;  
  
Batteries and cells, including equipment, of different sizes, shapes or masses may be packaged in an outer packaging of a tested design type listed above provided the total gross mass of the package does not exceed the mass for which the design type has been tested;
  - (ii) Each cell or battery is individually packed in an inner packaging inside an outer packaging;
  - (iii) Each inner packaging has been completely surrounded by sufficient non-combustible and non-conductive thermal insulation material to protect against a dangerous evolution of heat;
  - (iv) Appropriate measures have been taken to minimize the effects of vibration and shocks and prevent movement of the cells or batteries within the package that may lead to damage and a dangerous condition during transport. When cushioning material is used to meet this requirement it shall be non-combustible and non-conductive;
  - (v) Non-combustibility has been assessed according to a standard recognized in the country where the packaging is designed or manufactured;
  - (vi) The cells and batteries are protected against short circuit; and
  - (vii) A cell or battery with a net mass of more than 30 kg shall be limited to one cell or battery per outer packaging.
- (b) Cells and batteries contained in equipment:
  - (i) The equipment is transported in an outer packaging that is a metal (1A, 1B, 1N), plastics (1H) or plywood (1D) drum or a metal (3A, 3B) or plastics (3H) jerrican or a metal (4A, 4B, 4N), plastics (4H) or

wooden (4C, 4D, 4F) box or a metal (50A, 50B, 50N), plastics (50H) or wooden (50C, 50D, 50F) large packaging that meets the requirements of 4.1.1.3 at the packing group II performance level;

Equipment of different sizes, shapes and masses may be packaged in an outer packaging of a tested design type listed above provided the total gross mass of the package does not exceed the mass for which the design type has been tested;

- (ii) The equipment is constructed or packaged in such a manner as to prevent accidental operation during transport;
  - (iii) Appropriate measures have been taken to minimize the effects of vibration and shocks and prevent movement of the cells or batteries within the package that may lead to damage and a dangerous condition during transport. When cushioning material is used to meet this requirement it shall be non-combustible and non-conductive;
  - (iv) Non-combustibility has been assessed according to a standard recognized in the country where the packaging is designed or manufactured; and
  - (v) The cells and batteries are protected against short circuit.
- (c) The equipment or the batteries may be transported unpackaged under conditions specified by the competent authority. Additional conditions that may be considered in the approval process include, but are not limited to:
- (i) The equipment or the battery shall be strong enough to withstand the shocks and loadings normally encountered during transport, including trans-shipment between cargo transport units and between cargo transport units and warehouses as well as any removal from a pallet for subsequent manual or mechanical handling; and
  - (ii) The equipment or the battery shall be fixed in cradles or crates or other handling devices in such a way that they will not become loose during normal conditions of transport.
- (d) Identified damaged or defective cells and batteries shall be transported in accordance with special provision 376 and packaged in accordance with P908 of 4.1.4.1 or LP904 of 4.1.4.3, as applicable.”.

*(Reference document: informal document INF.62/Rev.1 as amended)*

SP327, in the third sentence, replace “LP02” by “LP200”.

*(Reference document: informal document INF.33)*

SP369 Amend the first paragraph to read as follows:

“In accordance with 2.0.3.2, this radioactive material in an excepted package possessing toxic and corrosive properties is classified in Division 6.1 with radioactive material and corrosivity subsidiary risks.”.

*(Reference document: ST/SG/AC.10/C.3/2014/60)*

SP369 Amend the third paragraph to read as follows:

“In addition to the provisions applicable to the transport of Division 6.1 substances with a corrosivity subsidiary risk, the provisions of 5.1.3.2, 5.1.5.2.2, 5.1.5.4.1 (b), 7.1.8.5.1 to 7.1.8.5.4 and 7.1.8.6.1 shall apply.”.

*(Reference document: ST/SG/AC.10/C.3/2014/60)*

SP373 (b) (i) and (c) (ii) Insert “or adsorbent” after “absorbent”. Insert “or adsorb” after “absorb”.

(Reference document: ST/SG/AC.10/C.3/2014/21 as amended)

Add a new special provision to read as follows:

“381 Large packagings conforming to the packing group III performance level used in accordance with packing instruction LP02 of 4.1.4.3, as prescribed in the 18th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations, may be used until 31 December 2022.”.

(Reference document: informal document INF.33 as amended)

### Alphabetical index

Amend the entry for “POLYESTER RESIN KIT” to read as follows:

POLYESTER RESIN KIT, liquid base material	3	3269
POLYESTER RESIN KIT, solid base material	4.1	3527

(Reference document: informal document INF.59, consequential amendment)

### Chapter 4.1

4.1.1.18 Amend the heading to read as follows: “*Use of salvage packagings and large salvage packagings*”

(Reference document: ST/SG/AC.10/C.3/2014/19)

4.1.1.18.1 In the first sentence, insert “and 6.6.5.1.9” after “6.1.5.1.11”. Amend the second sentence to read as follows: “This does not prevent the use of a larger size packaging or large packaging of appropriate type and performance level and under the conditions of 4.1.1.18.2 and 4.1.1.18.3.”.

(Reference document: ST/SG/AC.10/C.3/2014/19 as amended)

4.1.1.19.2 Add a second sentence to read as follows: “The maximum size of the placed pressure receptacle is limited to a water capacity of 1 000 litres.”. Add a penultimate sentence to read as follows: “In this case the total sum of water capacities of the placed pressure receptacles shall not exceed 1 000 litres.”.

(Reference document: ST/SG/AC.10/C.3/2014/16 as amended)

4.1.4.1, packing instruction 137: In special packing provision PP70, replace “THIS SIDE UP” by “... the package be marked in accordance with 5.2.1.7.1”.

(Reference document: ST/SG/AC.10/C.3/2014/58)

4.1.4.1, packing instruction P200 (3) Insert a new paragraph (e) to read as follows:

“(e) For liquefied gases charged with compressed gases, both components – the liquid phase and the compressed gas – have to be taken into consideration in the calculation of the internal pressure in the pressure receptacle.

The maximum mass of contents per litre of water capacity shall not exceed 0.95 times the density of the liquid phase at 50 °C; in addition, the liquid phase shall not completely fill the pressure receptacle at any temperature up to 60 °C.

When filled, the internal pressure at 65 °C shall not exceed the test pressure of the pressure receptacles. The vapour pressures and volumetric expansions of all

substances in the pressure receptacles shall be considered. When experimental data is not available, the following steps shall be carried out:

- (i) Calculation of the vapour pressure of the liquid component and of the partial pressure of the compressed gas at 15 °C (filling temperature);
  - (ii) Calculation of the volumetric expansion of the liquid phase resulting from the heating from 15 °C to 65 °C and calculation of the remaining volume for the gaseous phase;
  - (iii) Calculation of the partial pressure of the compressed gas at 65 °C considering the volumetric expansion of the liquid phase;
- NOTE:** *The compressibility factor of the compressed gas at 15 °C and 65 °C shall be considered.*
- (iv) Calculation of the vapour pressure of the liquid component at 65 °C;
  - (v) The total pressure is the sum of the vapour pressure of the liquid component and the partial pressure of the compressed gas at 65 °C;
  - (vi) Consideration of the solubility of the compressed gas at 65 °C in the liquid phase;

The test pressure of the pressure receptacle shall not be less than the calculated total pressure minus 100 kPa (1bar).

If the solubility of the compressed gas in the liquid component is not known for the calculation, the test pressure can be calculated without taking the gas solubility (paragraph (vi)) into account.”.

*(Reference document: ST/SG/AC.10/C.3/2014/14 as amended)*

4.1.4.1, P200 Insert a new paragraph (4) to read as follows and renumber existing paragraph (4) as (5):

“(4) The filling of pressure receptacles shall be carried out by qualified staff using appropriate equipment and procedures.

The procedures should include checks of:

- The conformity to regulations of receptacles and accessories;
- Their compatibility with the product to be transported;
- The absence of damage which might affect safety;
- Compliance with the degree or pressure of filling, as appropriate;
- Markings and identification.

These requirements are deemed to be met if the following standards are applied:

ISO 10691: 2004	Gas cylinders – Refillable welded steel cylinders for liquified petroleum gas (LPG) – Procedures for checking before, during and after filling.
ISO 11372: 2011	Gas cylinders – Acetylene cylinders – Filling conditions and filling inspection
ISO 11755: 2005	Gas cylinders – Cylinder bundles for compressed and liquefied gases (excluding acetylene) – Inspection at time of filling
ISO 13088: 2011	Gas cylinders – Acetylene cylinder bundles – Filling conditions and filling inspection
ISO 24431:2006	Gas cylinders – Cylinders for compressed and liquefied gases (excluding acetylene) – Inspection at time of filling

” (Reference document: ST/SG/AC.10/C.3/2014/27 as amended)

4.1.4.1, packing instruction P206 (3) At the end add the following paragraph:

For liquids charged with a compressed gas both components – the liquid phase and the compressed gas – have to be taken into consideration in the calculation of the internal pressure in the pressure receptacle. When experimental data is not available, the following steps shall be carried out:

- (a) Calculation of the vapour pressure of the liquid component and of the partial pressure of the compressed gas at 15 °C (filling temperature);
  - (b) Calculation of the volumetric expansion of the liquid phase resulting from the heating from 15 °C to 65 °C and calculation of the remaining volume for the gaseous phase;
  - (c) Calculation of the partial pressure of the compressed gas at 65 °C considering the volumetric expansion of the liquid phase;
- NOTE:** The compressibility factor of the compressed gas at 15 °C and 65 °C shall be considered.
- (d) Calculation of the vapour pressure of the liquid component at 65 °C;
  - (e) The total pressure is the sum of the vapour pressure of the liquid component and the partial pressure of the compressed gas at 65 °C;
  - (f) Consideration of the solubility of the compressed gas at 65 °C in the liquid phase.

The test pressure of the cylinders or pressure drums shall not be less than the calculated total pressure minus 100 kPa (1bar).

If the solubility of the compressed gas in the liquid component is not known for the calculation, the test pressure can be calculated without taking the gas solubility (paragraph (f)) into account.”.

(Reference document: ST/SG/AC.10/C.3/2014/14 as amended)

4.1.4.1, packing instructions P403 and P410: Delete special packing provision “PP83” and insert “PP83 Deleted”.

(Reference document: ST/SG/AC.10/C.3/2014/43)



4.1.4.1, packing instruction P502: Amend special packing provision “PP28” to read as follows:

“PP28 For UN No. 1873, parts of packagings which are in direct contact with perchloric acid shall be constructed of glass or plastics.”.

(Reference document: ST/SG/AC.10/C.3/2014/57)

4.1.4.1, P805 Renumber as “P603” and reorder accordingly.

(Reference document: ST/SG/AC.10/C.3/2014/60)

4.1.4.1, P906 (1) Amend to read as follows: “For liquids and solids containing or contaminated with PCBs, polyhalogenated biphenyls, polyhalogenated terphenyls or halogenated monomethyldiphenylmethanes: Packagings in accordance with P001 or P002, as appropriate.”.

(Reference document: ST/SG/AC.10/C.3/2014/13)

4.1.4.1, P906 (2) (b) Amend the end of the first sentence to read as follows: “PCBs, polyhalogenated biphenyls, polyhalogenated terphenyls or halogenated monomethyldiphenylmethanes present in them.”.

(Reference document: ST/SG/AC.10/C.3/2014/13)

4.1.4.1 Add a new packing instruction to read as follows:

P412	PACKING INSTRUCTION	P412
This instruction applies to UN No. 3527		
The following combination packagings are authorized, provided that the general provisions of <b>4.1.1</b> and <b>4.1.3</b> are met:		
(1) Outer packagings:		
Drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G);		
Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H1, 4H2)		
Jerricans (3A1, 3A2, 3B1, 3B2, 3H1, 3H2);		
(2) Inner packagings:		
(a) The activator (organic peroxide) shall have a maximum quantity of 125 ml per inner packaging if liquid, and 500 g per inner packaging if solid.		
(b) The base material and the activator shall be each separately packed in inner packagings.		
The components may be placed in the same outer packaging provided that they will not interact dangerously in the event of a leakage.		
Packagings shall conform to the packing group II or III performance level according to the criteria for Division 4.1 applied to the base material.		

(Reference document: informal document INF.59)

4.1.4.3, LP02 Delete special packing instruction L2 and insert “L2 Deleted”.

(Reference document: informal document INF.33)

## 4.1.4.3 Add the following large packaging provision:

LP200	PACKING INSTRUCTION	LP200
This instruction applies to UN No. 1950.		
The following large packagings are authorized for aerosols, provided that the general provisions of <b>4.1.1</b> and <b>4.1.3</b> are met: Rigid large packagings conforming to the packing group II performance level, made of: steel (50A); aluminium (50B); metal other than steel or aluminium (50N); rigid plastics (50H); natural wood (50C); plywood (50D); reconstituted wood (50F); rigid fibreboard (50G).		
<b>Special packing provision</b>		
<b>L2</b>	The large packagings shall be designed and constructed to prevent dangerous movement of the aerosols and inadvertent discharge during normal conditions of transport. For waste aerosols carried in accordance with special provision 327, the large packagings shall have a means of retaining any free liquid that might escape during transport, e.g. absorbent material. The large packagings shall be adequately ventilated to prevent the creation of a flammable atmosphere and the build-up of pressure.	

(Reference document: informal document INF.33)

**Chapter 6.2**

6.2.1.5.1 (g) Amend the text before the Note to read as follows:

“(g) A hydraulic pressure test. Pressure receptacles shall meet the acceptance criteria specified in the design and construction technical standard or technical code;”.

(Reference document: ST/SG/AC.10/C.3/2014/29)

[6.2.2.1.2 Insert a new last row in the table in 6.2.2.1.2 to read as follows:

ISO 11515: 2013	Gas cylinders – Refillable composite reinforced tubes of water capacity between 450 L and 3 000 L – Design, construction and testing	Until further notice
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(Reference document: ST/SG/AC.10/C.3/2014/28)

6.2.2.4 In the table, for ISO 10462: 2005, replace “Until further notice” by “Until 31 December 2018”.

6.2.2.4 In the table, after ISO 10462: 2005, insert a new row to read as follows:

ISO 10462: 2013	Gas cylinders – Acetylene cylinders – Periodic inspection and maintenance.	Until further notice
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(Reference document: ST/SG/AC.10/C.3/2014/28)

**Chapter 6.5**

6.5.2.2.4 Amend the beginning of the first sentence to read as follows: “Inner receptacles that are of composite IBC design type shall be identified by the application of the markings...”, remainder unchanged.

(Reference document: ST/SG/AC.10/C.3/2014/26)

6.5.2.2.4 Renumber the existing Note as Note 1. Add a new Note 2 to read as follows:

*“NOTE 2: The date of manufacture of the inner receptacle may be different from the marked date of manufacture (see 6.5.2.1), repair (see 6.5.4.5.3) or remanufacture (see 6.5.2.4) of the composite IBC.”*

*(Reference document: ST/SG/AC.10/C.3/2014/26)*

## Annex II

### **Corrections to the 18th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations**

#### **Chapter 4.1**

**4.1.4.1, packing instruction P112 (a), under “Inner packagings”, for “Bags”, before “textile”:**

*Insert plastics*

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P114 (a), under “Inner packagings”, for “Bags”, before “woven plastics”:**

*Insert textile*

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P114 (a), under “Intermediate packagings”, for “Bags”, after “plastics”:**

*Insert textile, plastics coated or lined*

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P116, under “Inner packagings”, for “Receptacles”, after “plastics”:**

*Insert wood, sift-proof*

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P116**

*Not applicable to English.*

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P131, under “Inner packagings”, for “Bags”, after “plastics”:**

*Insert sub-heading **Receptacles***

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P131, under “Outer packagings”, for “Boxes”, line “plastics, solid (4H2)”:**

*Move to the end.*

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P134, under “Inner packagings”, for “Receptacles”, before “metal”:**

*Insert fibreboard*

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P135, under “Inner packagings”, for “Bags”, after “plastics”:**

*Insert sub-heading Receptacles*

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P136, under “Inner packagings”, for “Bags”, after “textile”:**

*Insert sub-heading Boxes*

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P136, under “Inner packagings”:**

*For portions read partitions*

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P137, under “Outer packagings”, for “Boxes”, line “plastics, solid (4H2)”:**

*Move to the end.*

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P139, under “Inner packagings”, for “Receptacles”, before “metal”:**

*Insert fibreboard*

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P139**

*Not applicable to English.*

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P143, under “Inner packagings”, for “Trays, fitted with dividing partitions”, after “plastics”:**

*Insert wood*

*(Reference document: informal document INF.61, annex 2)*

**4.1.4.1, packing instruction P144, under “Inner packagings”, for “Receptacles”, after “metal”:**

*Insert plastics*

*(Reference document: informal document INF.61, annex 2)*

**Chapter 5.3, paragraph 5.3.1.2.1**

*Not applicable to English.*

*(Reference document: informal document INF.60)*

## Annex III

### **Draft amendments to the 5th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria**

#### **Section 38.3**

38.3.2.1 Amend the last sentence to read as follows:

“A component cell that is transported separately from the battery shall be subjected to tests T.1 to T.6 and T.8.”.

*(Reference document: ST/SG/AC.10/C.3/2014/45)*

[38.3.2.3 Amend the definitions hereafter to read as follows:

“*Cell* means a single encased electrochemical unit (one positive and one negative electrode) which exhibits a voltage differential across its two terminals, and may contain protective devices. See definitions for battery and single cell battery.”.

“*Component cell* means a cell contained in a battery. A component cell is not to be considered a single cell battery.”.

“*Battery* means two or more cells or batteries which are electrically connected together and fitted with devices necessary for use, for example, case, terminals, marking or protective devices. Units which have two or more cells that are commonly referred to as “battery packs”, “modules” or “battery assemblies” having the primary function of providing a source of power to another piece of equipment are for the purposes of the Model Regulations and this Manual treated as batteries. See definitions for cell and single cell battery.”.

“*Single cell battery* means a cell [externally] fitted with devices necessary for use in equipment or another battery which it is designed to power, for example protective devices. See definitions for cell and battery.

**NOTE:** *A single cell battery is considered a “cell” and shall be tested according to the testing requirements for “cells” for the purposes of the Model Regulations and this Manual.”.]*

*(Reference document: ST/SG/AC.10/C.3/2014/45 as amended)*

38.3.3 (d) Amend the last paragraph to read as follows:

“Batteries or single cell batteries not equipped with battery overcharge protection that are designed for use only as a component in another battery or in equipment, which affords such protection, are not subject to the requirements of this test.”.

*(Reference document: ST/SG/AC.10/C.3/2014/45 as amended)*

38.3.3 (f) Amend to read as follows:

“(f) When testing a battery in which the aggregate lithium content of all anodes, when fully charged, is not more than 500 g, or in the case of a lithium ion battery, with a Watt-hour rating of not more than 6 200 Wh, that is assembled from batteries or single cell batteries that have passed all applicable tests, one assembled battery in a fully charged state shall be tested under tests T.3, T.4 and T.5, and, in addition, test T.7 in the case of a rechargeable battery. A rechargeable battery shall have been cycled at least 25 cycles.”.

*(Reference document: ST/SG/AC.10/C.3/2014/45 as amended)*

38.3.3 (g) Amend to read as follows:

“(g) When batteries or single cell batteries that have passed all applicable tests are electrically connected to form a battery in which the aggregate lithium content of all anodes, when fully charged, is more than 500 g, or in the case of a lithium ion battery, with a Watt-hour rating of more than 6 200 Wh, the assembled battery does not need to be tested if:

- (i) It is designed with a battery management system that has been demonstrated to ensure that the battery will never be subject to overcharge; and
- (ii) The assembled battery is equipped with a system capable of preventing short circuits or over discharge between the batteries.”.

*(Reference document: ST/SG/AC.10/C.3/2014/45 as amended)*

38.3.4.7.1 Amend to read as follows:

“This test evaluates the ability of a rechargeable battery or a single cell rechargeable battery to withstand an overcharge condition.”.

*(Reference document: ST/SG/AC.10/C.3/2014/45)*

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