



**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 fifty-first session**

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Addendum

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Annex I

Corrections to the twentieth revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations (ST/SG/AC.10/1/Rev.20)

Chapter 1.4, 1.4.3.2.1, in the Note, last sentence

For markings *read* marks

(Reference document: informal document INF.18)

Chapter 2.0, 2.0.5, heading

For the existing text, *substitute*

2.0.5 Classification of articles as articles containing dangerous goods, N.O.S.

(Reference document: informal document INF.18)

Chapter 2.0, 2.0.5.1, first sentence

For may be transported *read* may be classified

(Reference document: informal document INF.18)

Chapter 2.0, 2.0.5.6

For the existing text, *substitute*

2.0.5.6 Subsidiary hazards shall be representative of the primary hazard posed by the other dangerous goods contained within the article. When only one item of dangerous goods is present in the article, the subsidiary hazard(s), if any, shall be the subsidiary hazard(s) identified in column (4) of the Dangerous Goods List. If the article contains more than one item of dangerous goods and these could react dangerously with one another during transport, each of the dangerous goods shall be enclosed separately (see 4.1.1.6).

(Reference document: informal document INF.37)

Chapter 2.1, 2.1.3.5.5, Note 2

For firework *read* fireworks

(Reference document: informal document INF.37)

Chapter 2.8, 2.8.4.3.5

For $\frac{PGx_1}{GCL} + \frac{PGx_2}{SCL_2} + \dots + \frac{PGx_i}{SCL_i} \geq 1$

read $\frac{PGx_1}{GCL} + \frac{PGx_2}{SCL_2} + \dots + \frac{PGx_i}{SCL_i} \geq 1$

For PG_{x_i} *read* PG_{x_i}

For SCL_i *read* SCL_i

(Reference document: informal document INF.18)

Chapter 3.2, Dangerous goods list, for UN Nos. 3090, 3091, 3480 and 3481, in column (6)

Insert P911

Insert LP905 LP906

(Reference document: informal document INF.18)

Chapter 3.3, special provision 188 (c)

For 9.2.4 (a) and (e) read 2.9.4 (a), (e), (f) if applicable and (g)

(Reference document: informal document INF.18)

Chapter 3.3, special provision 301, first paragraph, last sentence

For the existing text, *substitute*

When it is required to ensure liquid dangerous goods remain in their intended orientation, orientation arrows shall be displayed on at least two opposite vertical sides with the arrows pointing in the correct direction in accordance with 5.2.1.7.1.

(Reference document: informal document INF.18)

Chapter 3.3, special provision 388, in the second, third and seventh paragraphs

For consigned under the entries read assigned to the entries

(Reference document: informal document INF.18)

Chapter 3.3, special provision 388, fourth paragraph

Not applicable to English

(Reference document: informal document INF.18)

Chapter 3.3, special provision 389, first paragraph

For 2.9.4 (a) to (e) read 2.9.4 (a) to (g)

(Reference document: informal document INF.37)

Chapter 3.3, special provision 392, in the table, for ECE Regulation No. 110, in the second column

For the existing text, *substitute*

Uniform provisions concerning the approval of:

- I. Specific components of motor vehicles using compressed natural gas (CNG) and/or liquefied natural gas (LNG) in their propulsion system
- II. Vehicles with regard to the installation of specific components of an approved type for the use of compressed natural gas (CNG) and/or liquefied natural gas (LNG) in their propulsion system

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.1, packing instruction P200, (3) (a), (3) (b), (3) (b) (i) and (3) (d)

For (4) read (5)

(Reference document: informal document INF.37)

Chapter 4.1, 4.1.4.1, P520, PP94, 4.

For grammes read grams

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.1, P520, PP95, 5.

For grammes read grams

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.1, P907, after the heading row

Insert the following new row

This instruction applies to UN 3363.

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.1, P911, (1)

For the packaging has to read the packaging shall

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.1, P911, (1) (b)

For No flame will occur read No flame shall occur

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.1, P911, (1) (c)

For No projectiles will exit read No projectiles shall exit

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.1, P911, table note a, in (b), last sentence

For this hazards read these hazards

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.1, P911, table note a, in (c), at the beginning

For mitigations effects read mitigating effects

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.1, P911, table note a, in (e)

For the higher possible SOC read the highest possible SOC

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.1, P911, table note a, (h)

For the existing text, substitute

(h) These scenarios shall be assessed over a period of time long enough to allow all the possible consequences to occur (e.g. 24 hours).

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.3, LP903, second sentence

For the existing text, *substitute*

The following large packagings are authorized for a single battery and for a single item of equipment containing batteries, provided that the general provisions of **4.1.1** and **4.1.3** are met:

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.3, LP904, first sentence

For the existing text, *substitute*

This instruction applies to single damaged or defective batteries and to single items of equipment containing damaged or defective cells and batteries of UN Nos. 3090, 3091, 3480 and 3481.

(Reference document: informal document INF.18, as amended)

Chapter 4.1, 4.1.4.3, LP904, second sentence

For the existing text, *substitute*

The following large packagings are authorized for a single damaged or defective battery and for a single item of equipment containing damaged or defective cells and batteries, provided the general provisions of **4.1.1** and **4.1.3** are met.

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.3, LP905, second row after the heading row

For the existing text, *substitute*

The following large packagings are authorized for a single battery and for a single item of equipment containing cells or batteries, provided that the general provisions of **4.1.1** and **4.1.3** are met:

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.3, LP905, (2), first line

For the existing text, *substitute*

For a single item of equipment containing cells or batteries:

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.3, LP906, first row after the heading row

Delete single

(Reference document: informal document INF.37)

Chapter 4.1, 4.1.4.3, LP906, second row after the heading row, second line

For the existing text, *substitute*

For a single battery and for a single item of equipment containing batteries:

(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.3, LP906, (1), at the beginning

For The large packaging has to be capable *read* The large packaging shall be capable
(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.3, LP906, table note a, in (b), last sentence

For this hazards *read* these hazards
(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.3, LP906, table note a, in (c), at the beginning

For mitigations effects *read* mitigating effects
(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.3, LP906, table note a, in (e)

For the higher possible SOC *read* the highest possible SOC
(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.3, LP906, table note a, in (f), at the end

For the packaging *read* the large packaging
(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.3, LP906, table note a, (h)

For the existing text, *substitute*
(h) These scenarios shall be assessed over a period of time long enough to allow all the possible consequences to occur (e.g. 24 hours).
(Reference document: informal document INF.18)

Chapter 4.1, 4.1.4.1, P410, table note (d)

For the existing text *substitute*
^d For packing group II substances, these packagings may only be used when transported in a closed cargo transport unit.
(Reference document : informal document INF.5)

Chapter 5.2, 5.2.1.7.1

For the existing text, *substitute*
5.2.1.7.1 Except as provided in 5.2.1.7.2:
- Combination packagings having inner packagings containing liquid dangerous goods;
- Single packagings fitted with vents;
- Cryogenic receptacles intended for the transport of refrigerated liquefied gases; and
- Machinery or apparatus containing liquid dangerous goods when it is required to ensure the liquid dangerous goods remain in their intended orientation (see special provision 301 of chapter 3.3),
...

(Reference document: informal document INF.18)

Chapter 5.2, 5.2.2.1.13.1, at the beginning

For Packages containing dangerous goods in articles and dangerous goods in articles transported unpackaged read Packages containing articles or articles transported unpackaged

(Reference document: informal document INF.37)

Chapter 5.4, 5.4.1.5.5, at the beginning

Delete of Division 4.1

(Reference document: informal document INF.37)

Chapter 6.2, 6.2.2.1.8, table, Note for ISO 21172-1:2015

For irrespective of section read irrespective of section

(Reference document: informal document INF.37)

Chapter 7.1, 7.1.5.3.5, in the table, for Portable tanks, second column

For $< 50\text{ }^{\circ}\text{C}$ read $\leq 45\text{ }^{\circ}\text{C}$

(Reference document: informal document INF.37)

Appendix A, table, for class 2.1, last row

For GAZ read GAS

(Reference document: informal document INF.37)

Annex II

Draft amendments to the twentieth revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations (ST/SG/AC.10/1/Rev.20)

Chapter 1.1

[1.1.1.2 Amend paragraph (c) to read as follows:

“(c) Lithium battery powered cargo tracking devices or data loggers attached to packages, overpacks or cargo transport units if they meet the following:

- (i) Each cell or battery meets the applicable provisions of 2.9.4;
- (ii) The batteries and cells are afforded protection by an outer casing of adequate strength and design or by the device in which they are contained to prevent damage under normal conditions of transport.”.]

(Reference document: ST/SG/AC.10/C.3/2017/13, as amended)

Chapter 1.4

[1.4.3.1.2 In table 1.4.1, amend the line for Division 6.2 to read as follows:

“Division 6.2 Infectious substances of Category A (UN 2814 and UN 2900) and medical waste of Category A (UN 3549)”].

(Reference document: informal document INF.43)

Chapter 2.6

[2.6.3.1.6 Amend to read as follows:

“Medical or clinical wastes are wastes derived from the veterinary treatment of animals, the medical treatment of humans or from bio-research.”].

(Reference document: informal document INF.43)

[2.6.3.2.1 Replace “or UN 3373” by “, UN 3373 or UN 3549”].

(Reference document: informal document INF.43)

[2.6.3.2.3.9 (a) In the parenthesis, after “UN 3291” add “and UN 3549”].

(Reference document: informal document INF.43)

[2.6.3.5.1 Amend to read as follows:

2.6.3.5.1 Medical or clinical waste containing:

- (a) Category A infectious substances shall be assigned to UN 2814, UN 2900 or UN 3549 as appropriate. Solid medical waste containing Category A infectious substances generated from the medical treatment of humans or veterinary treatment of animals may be assigned to UN 3549. The UN 3549 entry shall not be used for waste from bio-research or liquid waste;

(b) Category B infectious substances shall be assigned to UN 3291.”]

(Reference document: informal document INF.43)

Chapter 2.9

2.9.4 (g) After “Manufacturers and subsequent distributors of cells or batteries” add “manufactured after 30 June 2003”.

(Reference document: informal document INF.42)

Chapter 3.2

Dangerous goods list

[Insert the following new entry:

(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
3549	MEDICAL WASTE, CATEGORY A, AFFECTING HUMANS, solid or MEDICAL WASTE, CATEGORY A, AFFECTING ANIMALS only, solid	6.2		-	318	0	E0	P622 LP622			

]

Chapter 3.3

Special provision 239 Delete the last sentence.

(Reference document: ST/SG/AC.10/C.3/2017/6, as amended)

Special provision 360 Replace “consigned under” by “assigned to” and add the following sentence at the end:

“Lithium batteries installed in cargo transport units, designed only to provide power external to the transport unit shall be assigned to entry UN 3536 LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT.”

(Reference document: ST/SG/AC.10/C.3/2017/4, proposal 1 as amended)

Special provision 379 (d) (i) Replace “ISO 11114-1:2012” by “ISO 11114-1:2012 + Amd 1:2017”.

(Reference document: ST/SG/AC.10/C.3/2017/17, proposal 1)

Special provision 388 At the end of the seventh paragraph, add the following sentence:

“Lithium ion batteries or lithium metal batteries installed in a cargo transport unit and designed only to provide power external to the cargo transport unit shall be assigned to the entry UN 3536 LITHIUM BATTERIES”.

(Reference document: ST/SG/AC.10/C.3/2017/4, proposal 2 as amended)

Appendix A

[In the table, for Division 6.2, under “Specific entries”, add the following new entries:

6.2		3549	MEDICAL WASTE, CATEGORY A, AFFECTING HUMANS, solid
6.2		3549	MEDICAL WASTE, CATEGORY A, AFFECTING ANIMALS only, solid

]

Alphabetical index

[Add the following new entries in alphabetical order:

MEDICAL WASTE, CATEGORY A, AFFECTING HUMANS, solid	6.2	3549
MEDICAL WASTE, CATEGORY A, AFFECTING ANIMALS only, solid	6.2	3549

]

(Reference document: informal document INF.43)

Chapter 4.1

[4.1.1 In the note, replace “(Division 6.2)” by “(Division 6.2, UN 2814 and UN 2900)”. Amend the end of the sentence to read “(P201 and LP02 for Class 2 and P620, P621, P622, IBC620, LP621 and LP622 for Division 6.2)”.]

(Reference document: informal document INF.43)

4.1.4.1, packing instruction P200 In (4), replace the reference on the last line to “ISO 24431:2006 Gas cylinders – Cylinders for compressed and liquefied gases (excluding acetylene) – Inspection at time of filling” by “ISO 24431:2016 Gas cylinders – Seamless, welded and composite cylinders for compressed and liquefied gases (excluding acetylene) – Inspection at time of filling”.

(Reference document: ST/SG/AC.10/C.3/2017/17, proposal 3)

[4.1.4.1 Add the following new packing instruction P622:

P622			PACKING INSTRUCTION			P622		
This instruction applies to solid medical or clinical waste assigned to UN 3549 transported for disposal.								
The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met:								
Inner packagings			Intermediate packagings			Outer packagings		

metal plastics	metal plastics	Boxes steel (4A) aluminium (4B) plywood (4D) fibreboard (4G) other metal (4N) plastics, solid (4H2) Drums steel (1A2) aluminium (1B2) plywood (1D) fibre (1G) other metal (1N2) plastics (1H2) Jerricans steel (3A2) aluminium (3B2) plastics (3H2)
The packaging shall conform to the packing group I performance level for solids.		
Additional requirements:		
<ol style="list-style-type: none"> 1. Fragile articles shall be contained in either a rigid inner packaging or rigid intermediate packagings. 2. Inner packagings containing sharps objects such as broken glass and needles shall be rigid and resistant to puncture. 3. The inner packaging and the intermediate packaging shall be capable of retaining liquids. 5. The inner packaging and/or the intermediate packaging may be flexible. When flexible packagings are used, they shall be capable of passing the tests for tear and impact resistance according to ISO 7765-1:1988 "Plastics film and sheeting – Determination of impact resistance by the free-falling dart method – Part 1: Staircase methods" and ISO 6383-2:1983 "Plastics – Film and sheeting – Determination of tear resistance – Part 2: Elmendorf method". Each bag shall have an impact resistance of at least 165 g and a tear resistance of at least 480 g in both parallel and perpendicular planes with respect to the length of the bag. The maximum net mass of each plastic bag shall be 30 kg. 6. Each flexible intermediate packaging shall contain only one inner packaging. 7. Inner packagings containing a small amount of free liquid may be included in intermediate packaging provided that there is sufficient absorbent or solidifying material in the inner or intermediate packaging to absorb or solidify all the liquid content present. Suitable absorbent material which may withstand the temperatures and vibrations liable to occur under normal conditions of transport shall be used. 8. When outer packagings are not capable of retaining liquids either the inner packaging or the intermediate packaging shall be rigid. 9. Where the solid material is saturated and there is the possibility of liquid being released during transport only outer packagings capable of retaining liquids shall be used. 		

]

(Reference document: informal document INF.43)

[4.1.4.3 Add the following new packing instruction LP622:

LP622	PACKING INSTRUCTION	LP622
This instruction applies to solid medical or clinical waste assigned to UN 3549 transported for disposal.		
The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met:		
Inner packagings	Intermediate packagings	Outer packagings

metal plastics	metal plastics	steel (50A) aluminium (50B) plywood (50D) fibreboard (50G) other metal (50N) plastics (50H)
The packaging shall conform to the packing group I performance level for solids.		
Additional requirements:		
<ol style="list-style-type: none"> 1. Fragile articles shall be contained in either a rigid inner packaging or a rigid intermediate packagings. 2. Inner packagings containing sharps objects such as broken glass and needles shall be rigid and resistant to puncture. 3. The inner packaging and the intermediate packaging shall be capable of retaining liquids. 4. The inner packaging and/or the intermediate packaging may be flexible. When flexible packagings are used, they shall be capable of passing the tests for tear and impact resistance according to ISO 7765-1:1988 "Plastics film and sheeting – Determination of impact resistance by the free-falling dart method – Part 1: Staircase methods" and ISO 6383-2:1983 "Plastics – Film and sheeting – Determination of tear resistance – Part 2: Elmendorf method". Each bag shall have an impact resistance of at least 165 g and a tear resistance of at least 480 g in both parallel and perpendicular planes with respect to the length of the bag. The maximum net mass of each plastic bag shall be 30 kg. 5. Each flexible intermediate packaging shall contain only one inner packaging. 6. Inner packagings containing a small amount of free liquid may be included in intermediate packaging provided that there is sufficient absorbent or solidifying material in the inner or intermediate packaging to absorb or solidify all the liquid content present. Suitable absorbent material which may withstand the temperatures and vibrations liable to occur under normal conditions of transport shall be used. 7. When outer packagings are not capable of retaining liquids either the inner packaging or the intermediate packaging shall be rigid. 8. Where the solid material is saturated and there is the possibility of liquid being released during transport only outer packagings capable of retaining liquids shall be used. 		

]

(Reference document: informal document INF.43)

4.1.6.1.2 Replace "ISO 11114-1:2012" by "ISO 11114-1:2012 + Amd 1:2017".

(Reference document: ST/SG/AC.10/C.3/2017/17, proposal 1)

4.1.6.1.8 In the second sentence of the penultimate paragraph replace "annex A of ISO 10297:2006 or annex A of ISO 10297:2014" by "annex A of ISO 10297:2006, annex A of ISO 10297:2014 or annex A of ISO 10297 + Amd 1:2017".

(Reference document: ST/SG/AC.10/C.3/2017/17, proposal 2)

Chapter 5.2

5.2.2.2.1.1.2 Amend to read as follows:

"5.2.2.2.1.1.2 The label shall be in the form of a square set at an angle of 45 degrees (diamond-shaped). The minimum dimensions shall be 100 mm x 100 mm. There shall be a line inside the edge forming the diamond which shall be parallel and approximately 5 mm from the outside of that line to the edge of the label."

(Reference document: informal document INF.41)

Chapter 6.1

[6.1.1.1 (e) At the end, add "except for UN 3549".]

(Reference document: informal document INF.43)

Chapter 6.2

6.2.2.2 Replace “ISO 11114-1:2012” by “ISO 11114-1:2012 + Amd 1:2017”.

(Reference document: ST/SG/AC.10/C.3/2017/17, proposal 1)

6.2.2.3 In the first table, for ISO 10297:2014, in the column “Applicable for manufacture”, replace “Until further notice” by “Until 31 December 2022”. After the row for ISO 10297:2014 insert the following new row.

ISO 10297:2014 + Amd 1:2017	Gas cylinders – Cylinder valves – Specification and type testing;	Until further notice
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(Reference document: ST/SG/AC.10/C.3/2017/17, proposal 2)

Chapter 6.3

[In the title of Chapter 6.3, at the end, add “(UN 2814 and UN 2900)”].

(Reference document: informal document INF.43)

[6.3.1.1 At the end, add “, UN 2814 and UN 2900”.]

(Reference document: informal document INF.43)

Chapter 6.7

6.7.5.2.3 In the first sentence, after “seamless steel” insert “or composite construction”.

(Reference document: ST/SG/AC.10/C.3/2017/18, proposal 1 as amended)

6.7.5.2.4 (a) Replace “ISO 11114-1:2012” by “ISO 11114-1:2012 + Amd 1:2017”.

(Reference document: ST/SG/AC.10/C.3/2017/17, proposal 1)

Annex III

Draft amendments to the 6th revised edition of the Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.6) (as amended in accordance with ST/SG/AC.10/44/Add.2)

Section 38.3

38.3.5 (f) Amend sub-paragraph (ii) to read as follows:

“(ii) Mass of cell or battery;”.

(Reference document: informal document INF.42)

38.3.5 (f) Amend sub-paragraph (v) to read as follows:

“(v) Cell or battery model number or, alternatively, if the test summary is established for a product containing a cell or battery, the product model number;”.

(Reference document: informal document INF.42)
