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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 sixty-first session**

held in Geneva from 28 November to 6 December 2022

**Addendum**

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<sup>1</sup> For practical reasons, these annexes have been published as an addendum with the symbol ST/SG/AC.10/C.3/122/Add.1.



# I. Draft amendments to the twenty-second revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations (ST/SG/AC.10/1/Rev.22)

## Chapter 1.2

1.2.1 Amend the definition of “*Recycled plastics material*” to read as follows:

“*Recycled plastics material* means material recovered from used industrial packagings or from other plastics material that has been pre-sorted and prepared for processing into new packagings, including IBCs. The specific properties of the recycled material used for production of new packagings, including IBCs, shall be assured and documented regularly as part of a quality assurance programme recognized by the competent authority. The quality assurance programme shall include a record of proper pre-sorting and verification that each batch of recycled plastics material, which is of homogeneous composition, is consistent with the material specifications (melt flow rate, density, and tensile property) of the design type manufactured from such recycled material. This necessarily includes knowledge about the plastics material from which the recycled plastics have been derived, as well as awareness of the prior use, including prior contents, of the plastics material if that prior use might reduce the capability of new packagings, including IBCs, produced using that material. In addition, the packaging or IBC manufacturer's quality assurance programme under 6.1.1.4 or 6.5.4.1 shall include performance of the appropriate mechanical design type tests in 6.1.5 or 6.5.6 on packagings or IBCs, manufactured from each batch of recycled plastics material. In this testing, stacking performance may be verified by appropriate dynamic compression testing rather than static load testing.”

In the note under the definition, in the first sentence, replace “to be followed” by “which may be followed”.

(Reference document: informal document INF.57)

## Chapter 2.1

2.1.1.3 In (b), replace “a substance or a mixture of substances” by “an explosive substance”.

At the end, add a new subparagraph to read as follows:

“ (e) *Explosive or pyrotechnic effect* means, in the context of 2.1.1.1 (c), an effect produced by self-sustaining exothermic chemical reactions including shock, blast, fragmentation, projection, heat, light, sound, gas and smoke.”

(Reference document: ST/SG/AC.10/C.3/2022/47, with editorial changes in the English version)

## Chapter 2.4

2.4.2.2.1 Add a new 2.4.2.2.1.3 to read as follows:

“2.4.2.2.1.3 *Metal powders* are powders of metals or metal alloys.”

(Reference document: informal document INF.44, editorially revised)

2.4.2.2.2.1 In the second sentence, replace “Powders of metals or metal-alloys” by “Metal powders”.

(Reference document: informal document INF.44)

2.4.2.2.3.1 In the third sentence, replace “powders of metals or metal-alloys” by “metal powders”.

(Reference document: informal document INF.44)

## Chapter 2.7

2.7.1.3 In the definition for “*Specific activity of a radionuclide*”, at the end, add the following new note:

“**NOTE:** The terms “*activity concentration*” and “*specific activity*” are synonymous for the purpose of these Regulations.”

(Reference document: ST/SG/AC.10/C.3/2022/46)

## Chapter 2.9

2.9.2 In the section for “***Other substances or articles presenting a danger during transport, but not meeting the definitions of another class***”, add the following new entries:

“3556 VEHICLE, LITHIUM ION BATTERY POWERED

3557 VEHICLE, LITHIUM METAL BATTERY POWERED

3558 VEHICLE, SODIUM ION BATTERY POWERED”.

(Reference document: informal document INF.51/Rev.1)

## Chapter 3.1

3.1.2.2 In the first sentence, delete “and” or”.

(Reference document: ST/SG/AC.10/C.3/2022/65)

## Chapter 3.2, dangerous goods list

For UN 0331, in column (11), delete “TP1”.

(Reference document: ST/SG/AC.10/C.3/2022/77, proposal 1)

For UN Nos. 1006, 1013, 1046 and 1066, in column (6), add “406”.

(Reference document: informal document INF.52)

For UN Nos. 1204, 2059, 2555, 2556, 2907, 3064, 3319, 3343, 3344 and 3357, in column (6), add “28”.

(Reference document: informal document INF.48)

For UN Nos. 1391 and 3482, in column (10), add “T13” and in column (11), add “TP2 TP7 TP42”.

(Reference document: informal document INF.56)

For UN 1835, PG II, in column (2), replace “SOLUTION” by “AQUEOUS SOLUTION with more than 2.5 % but less than 25 % tetramethylammonium hydroxide”, in column (4), add “6.1” and in column (6) add “279 408 409”.

(Reference document: informal document INF.54)

For UN 1835, PG III, in column (2), replace “SOLUTION” by “AQUEOUS SOLUTION with not more than 2.5 % tetramethylammonium hydroxide” and in column (6) add “408 409”.

(Reference document: informal document INF.54)

For UN 3270, in column (6), add “403”.

(Reference document: ST/SG/AC.10/C.3/2022/59)

For UN 3423, in column (3), replace “8” by “6.1”, in column (4), add “8”, in column (5), replace “II” by “I”, in column (6), add “279 409”, in column (7a), replace “1 kg” by “0”, in

column (7b), replace “E2” by “E5”, in column (8), replace “IBC08” by “IBC99”, in column (9), delete “B2, B4” and in column (10), replace “T2” by “T6”.

(Reference document: informal document INF.54)

Add the following new entries:

(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
0514	FIRE SUPPRESSANT DISPERSING DEVICES	1.4S			407	0	E0	P135			
1835	TETRAMETHYLAMMONIUM HYDROXIDE AQUEOUS SOLUTION with not less than 25 % tetramethylammonium hydroxide	6.1	8	I	279 408 409	0	E5	P001		T14	TP2
3556	VEHICLE, LITHIUM ION BATTERY POWERED	9			384 388 405	0	E0	P912			
3557	VEHICLE, LITHIUM METAL BATTERY POWERED	9			384 388 405	0	E0	P912			
3558	VEHICLE, SODIUM ION BATTERY POWERED	9			384 388 404 405	0	E0	P912			
3559	FIRE SUPPRESSANT DISPERSING DEVICES	9			407	0	E0	P902			

(Reference documents: informal documents INF.51/Rev.1, INF.53/Rev.1 and INF.54)

### Chapter 3.3

SP 28 At the end, add the following new sentence: “In cases where the diluent is not stated, the substance shall be packed so that the amount of explosive substance does not exceed the stated value.”.

(Reference document: informal document INF.48)

SP 280 In the last sentence, at the end, add “or to fire suppressant dispersing devices (UN Nos. 0514 and 3559)”.

(Reference document: informal document INF.53/Rev.1, editorially revised)

SP 360 In the first sentence, replace “UN 3171 BATTERY-POWERED VEHICLE” by “UN 3556 VEHICLE, LITHIUM ION BATTERY POWERED or UN 3557 VEHICLE, LITHIUM METAL BATTERY POWERED or UN 3558 VEHICLE, SODIUM ION BATTERY POWERED, as applicable”.

(Reference document: informal document INF.51/Rev.1)

SP 371 In (1) (f), replace “16.6.1.3.1 to 16.6.1.3.6” by “16.6.1.3.1 to 16.6.1.3.1.4, 16.6.1.3.6”.

(Reference document: ST/SG/AC.10/C.3/2022/64, proposal 1)

SP 388 Amend paragraph 5 to read as follows:

“Entry UN 3171 only applies to vehicles and equipment powered by wet batteries, metallic sodium batteries or sodium alloy batteries, with these batteries installed.”

After paragraph 5, add the following new paragraph:

“UN 3556 VEHICLE, LITHIUM ION BATTERY POWERED, UN 3557 VEHICLE, LITHIUM METAL BATTERY POWERED and UN 3558 VEHICLE, SODIUM ION BATTERY POWERED, as applicable, apply to vehicles powered by lithium ion, lithium metal or sodium ion batteries transported with the batteries installed.”

In paragraph 7 (old paragraph 6), combine and amend the last two sentences to read “When vehicles are transported in a packaging, some parts of the vehicle, other than the battery, may be detached from its frame to fit into the packaging.”.

*(Reference document: informal document INF.51/Rev.1)*

Add the following new special provisions:

“SP 403 Nitrocellulose (NC) membrane filters covered by this entry with NC content not exceeding 53 g/m<sup>2</sup> and a NC net weight not exceeding 300 g per inner packaging, are not subject to the requirements of this regulation if they meet the following conditions:

- (a) They are packed with paper separators of minimum 80 g/m<sup>2</sup> placed between each layer of NC membrane filters;
- (b) They are packed to maintain the alignment of the NC membrane filters and the paper separators in any of the following configurations:
  - (i) Rolls tightly wound and packed in plastic foil of minimum 80 g/m<sup>2</sup> or aluminium pouches with an oxygen permeability of equal or less than 0.1 % according to standard ISO 15105-1:2007;
  - (ii) Sheets packed in cardboard of min. 250 g/m<sup>2</sup> or aluminium pouches with an oxygen permeability of equal or less than 0.1 % according to standard ISO 15105-1:2007;
  - (iii) Round filters packed in disc holders or cardboard packaging of minimum 250 g/m<sup>2</sup> or single packed in pouches of paper and plastic material of total minimum 100 g/m<sup>2</sup>.”

“404 Vehicles powered by sodium ion batteries, containing no other dangerous goods, are not subject to other provisions of these Regulations, if the battery is short-circuited, in a way that the battery does not contain electrical energy. The short-circuiting of the battery shall be easily verifiable (e.g., busbar between terminals).”

“405 Vehicles are not subject to the marking or labelling requirements of Chapter 5.2 when they are not fully enclosed by packagings, crates or other means that prevent ready identification.”

“406 This entry may be transported in accordance with the limited quantity provisions of Chapter 3.4 when transported in pressure receptacles containing not more than 1 000 ml. The pressure receptacles shall meet the requirements of packing instruction P200 of 4.1.4.1 and have a test pressure capacity product not exceeding 15.2 MPa·l (152 bar·l). The pressure receptacles shall not be packed together with other dangerous goods.”

“407 Fire suppressant dispersing devices are articles which contain a pyrotechnic substance, which are intended to disperse a fire extinguishing agent (or aerosol) when activated, and which do not contain any other dangerous goods. These articles, as packaged for transport, shall fulfil the criteria for Division 1.4S, when tested in accordance with test series 6(c) of Section 16 of Part 1 of the Manual of Tests and Criteria. The device shall be transported with either the means of activation removed or equipped with at least two independent means to prevent accidental activation.

Fire suppressant dispersing devices shall only be assigned to Class 9, UN 3559 if the following additional conditions are met:

- (a) The device meets the exclusion criteria in 2.1.3.6.4 (b), (c) and (d);
- (b) The suppressant shall be deemed safe for normally occupied spaces in compliance with international or regional standards (e.g. NFPA2010);
- (c) The article shall be packaged in a manner such that when activated, temperatures of the outside of the package shall not exceed 200 °C;
- (d) This entry shall be used only with the approval of the competent authority of the country of manufacture.

This entry does not apply to “SAFETY DEVICES, electrically initiated” described in special provision 280 (UN 3268).”

“408 This entry applies only to aqueous solutions comprised of water, tetramethylammonium hydroxide (TMAH), and no more than 1 % other constituents. Other formulations containing tetramethylammonium hydroxide must be assigned to an appropriate generic or N.O.S. entry (e.g., UN 2927, TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S., etc.), except as follows:

- (a) Other formulations containing a surfactant in a concentration > 1 % and with not less than 8.75 % tetramethylammonium hydroxide must be assigned to UN 2927, TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S., PG I; and
- (b) Other formulations containing a surfactant in a concentration > 1 % and with more than 2.38 % but less than 8.75 % tetramethylammonium hydroxide must be assigned to UN 2927, TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S., PG II.”

“409 The provisions of Chapter 3.2 from the twenty-second revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations may continue to be applied until 31 December 2026.”

*(Reference documents: ST/SG/AC.10/C.3/2022/59, as amended and informal documents INF.51/Rev.1, INF.52, as amended, INF.53/Rev.1, as amended and INF.54, as amended)*

## Appendix B

Add the following new entry:

### “FIRE SUPPRESSANT DISPERSING DEVICES

Fire suppressant dispersing devices are articles which contain a pyrotechnic substance, which are intended to disperse a fire extinguishing agent (or aerosol) when activated, and which do not contain any other dangerous goods.”

*(Reference document: informal document INF.53/Rev.1, as amended)*

## Alphabetical index

Amend the entry for “TETRAMETHYLAMMONIUM HYDROXIDE SOLUTION” to read as follows:

TETRAMETHYLAMMONIUM HYDROXIDE	6.1	1835
AQUEOUS SOLUTION	8	1835

*(Consequential amendment)*

In the entry for “TETRAMETHYLAMMONIUM HYDROXIDE, SOLID”, in the second column, replace “8” by “6.1”.

*(Consequential amendment)*

Add the following new entries in alphabetical order:

FIRE SUPPRESSANT DISPERSING DEVICES	1.4S 9	0514 3559
VEHICLE, LITHIUM ION BATTERY POWERED	9	3556
VEHICLE, LITHIUM METAL BATTERY POWERED	9	3557
VEHICLE, SODIUM ION BATTERY POWERED	9	3558

(Reference documents: informal documents INF.51/Rev.1 and INF.53/Rev.1)

## Chapter 4.1

4.1.4.1, P001, P002, P410, P501, P502 and P504 Amend the formatting as needed to display composite packagings as a category of single packagings.

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 2)

4.1.4.1, P001, P002, P410, P520, P911 Place the footnotes directly below the packing instruction, in those pages in which they appear.

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 3)

4.1.4.1, P200 In (4), renumber the first list with bullets as (a) to (e) and delete the bullets from the second one.

In (5) s, renumber the list with bullets as (a) to (b).

In (5) t, renumber (i), (ii) as (a), (b).

In table 1, place footnote <sup>a</sup> directly below the packing instruction (two times). In table 3, renumber footnote <sup>a</sup> as footnote <sup>b</sup> (entries for UN Nos. 1745, 1746 2495, as well as the footnote itself).

In tables 1, 2 and 3, in the heading of the fourth column, replace “hazard” by “hazards”. In all entries with multiple hazards, separate each hazard with a comma. In all entries with multiple test pressures, separate each row with dashed line spanning the last three columns. For UN Nos. 1010, 1012, 1060 and 2073, separate the different entries with a different “name and description” with a dashed line spanning all columns except the first one.

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 1, 3 and 5)

4.1.4.1, P203 In (9), renumber the list with bullets as (a) to (e).

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 5)

4.1.4.1, P208 In table 1, remove the header row containing column numbers.

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 10)

4.1.4.1, P404 Amend the second row under the heading to read as follows:

The following packagings are authorized, provided that the general provisions of **4.1.1** and **4.1.3** are met:

(1) Combination packagings:

Outer packagings:

Drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G);

Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G or 4H2).

Inner packagings:

Metal receptacles with a maximum net mass of 15 kg each. Inner packagings shall be hermetically sealed;

<p>Glass receptacles, with a maximum net mass of 1 kg each, having closures with gaskets, cushioned on all sides and contained in hermetically sealed metal cans.</p> <p>Outer packagings shall have a maximum net mass of 125 kg.</p> <p>Inner packagings shall have threaded closures or closures physically held in place by any means capable of preventing back-off or loosening of the closure by impact or vibration during transport.</p>
<p>(2) Metal packagings:</p> <p style="padding-left: 40px;">Drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2);</p> <p style="padding-left: 40px;">Jerricans (3A1, 3A2, 3B1 and 3B2).</p> <p>Maximum gross mass: 150 kg</p>
<p>(3) Composite packagings:</p> <p style="padding-left: 40px;">Plastics receptacle in a steel or aluminium drum (6HA1 or 6HB1).</p> <p>Maximum gross mass: 150 kg</p>
<p>(4) Pressure receptacles, provided that the general provisions of 4.1.3.6 are met.</p>

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 10)

4.1.4.1, P501 Under "Combination packagings", before "Boxes", delete "(1)" and before "Fibreboard", delete (2).

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 5)

4.1.4.1, P505 Amend rows 3 and 4 under the heading to read as follows:

		Maximum capacity/maximum net mass
<b>Combination packagings</b>		
<b>Inner packagings</b>	<b>Outer packagings</b>	
glass 5 l	<b>Boxes</b>	
plastics 5 l	aluminium (4B)	125 kg
metal 5 l	natural wood, ordinary (4C1)	125 kg
	natural wood, sift-proof walls (4C2)	125 kg
	plywood (4D)	125 kg
	fibreboard (4G)	125 kg
	plastics, solid (4H2)	125 kg
	<b>Drums</b>	
	aluminium, removable head (1B2)	125 kg
	fibre (1G)	125 kg
	other metal, removable head (1N2)	125 kg
	plastics, removable head (1H2)	125 kg
	plywood (1D)	125 kg
	<b>Jerricans</b>	
	aluminium, removable head (3B2)	125 kg
	plastics, removable head (3H2)	125 kg
<b>Single packagings</b>		

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 8)

4.1.4.1, P520 In (1), replace “, jerricans” by “and jerricans”.

Amend the table under (3) to read as follows:



...

The maximum quantities per packaging/package for packing methods OP1 to OP8 are:

	OP1	OP2 <sup>a</sup>	OP3	OP4 <sup>a</sup>	OP5	OP6	OP7	OP8
Maximum net mass (kg) for solids and for combination packagings (liquid and solid)	0.5	0.5/10	5	5/25	25	50	50	400 <sup>b</sup>
Maximum contents in litres for liquids <sup>c</sup>	0.5	-	5	-	30	60	60	225 <sup>d</sup>

In PP94, renumber 1. to 5. as (a) to (e). In PP95, renumber 1. to 6. as (a) to (f).

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 4, as amended, 5 and 10)

4.1.4.1, P600 Amend the second row under the heading to read as follows:

The following packagings are authorized, provided that the general provisions of **4.1.1** and **4.1.3** are met:

Drums (1A1, 1A2, 1B1, 1B2, 1N1, 1N2, 1H1, 1H2, 1D, 1G);

Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H2).

Outer packagings shall meet the packing group II performance level.

Articles shall be individually packaged and separated from each other using partitions, dividers, inner packagings or cushioning material to prevent inadvertent discharge during normal conditions of transport.

Maximum net mass: 75 kg

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 7)

4.1.4.1, P601 In (1), renumber the list with bullets as (a) to (c).

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 5)

4.1.4.1, P602 In (1), renumber the list with bullets as (a) to (c).

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 5)

4.1.4.1, P603 Add a new additional requirement reading “4. In the case of fissile-excepted material, limits specified in 2.7.2.3.5 shall be met.”. Delete the entire row for special packing provisions.

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 9a)

4.1.4.1, P803 Amend the second row under the heading to read as follows:

The following packagings are authorized, provided that the general provisions of **4.1.1** and **4.1.3** are met:

Drums (1A2, 1B2, 1N2, 1H2, 1D, 1G);

Boxes (4A, 4B, 4N, 4C1, 4C2, 4D, 4F, 4G, 4H2).

Articles shall be individually packaged and separated from each other using partitions, dividers, inner packagings or cushioning material to prevent inadvertent discharge during normal conditions of transport.

Maximum net mass: 75 kg.

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 7)

4.1.4.1, P804 In (1), renumber the list with bullets as (a) to (c).

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 5)

4.1.4.1, P902 In the second row under the heading, insert “(1)” before “**Packaged articles:**” and remove the boldface, and insert “(2)” before “**Unpackaged articles:**” and remove the boldface.

Under “(2) Unpackaged articles:”, amend the beginning of the sentence to read “Except for UN 3559, the articles...”.

(Reference documents: ST/SG/AC.10/C.3/2022/76, proposal 5 and informal document INF.53/Rev.1)

4.1.4.1, P904 In the additional requirement, delete the first line reading “Ice, dry ice and liquid nitrogen”.

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 6)

4.1.4.1, P908 In the second row under the heading, before the numbered list, insert a new paragraph reading “Packagings shall also meet the following requirements:”. In the list, renumber 1. to 5. as (a) to (e).

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 5)

4.1.4.1, P909 In additional requirement 2, renumber the list with bullets as (a) to (d).

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 5)

4.1.4.1, P910 In the additional requirement, at the end of the first sentence, replace the semicolon by a full stop and delete the paragraph break so that the first two sentences are displayed in a single paragraph.

In the additional requirement, renumber the list with bullets as (a) to (d).

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 5 and 10)

4.1.4.1 Add the following new packing instruction:

P912	PACKING INSTRUCTION	P912
This packing instruction applies to UN Nos. 3556, 3557 and 3558.		
<p>The vehicle shall be secured in a strong, rigid outer packaging constructed of suitable material, and of adequate strength and design in relation to the packaging capacity and its intended use. It shall be constructed in such a manner as to prevent accidental operation during transport. Packagings need not meet the requirements of 4.1.1.3. The vehicle shall be secured by means capable of restraining the vehicle in the outer packaging to prevent any movement during transport which would change the orientation or cause the battery in the vehicle to be damaged.</p> <p>Vehicles transported in a packaging may have some parts of the vehicle, other than the battery, detached from its frame to fit into the packaging.</p> <p><b>NOTE:</b> The packagings may exceed a net mass of 400 kg (see 4.1.3.3).</p> <p>Vehicles with an individual net mass of 30 kg or more:</p> <ul style="list-style-type: none"> <li>(a) may be loaded into crates or secured to pallets; or</li> <li>(b) may be transported unpackaged providing that the vehicle is capable of remaining upright during transport without additional support and the vehicle provides adequate protection to the battery so that no damage to the battery can occur; or</li> <li>(c) where the vehicle has the potential to topple over during transport (e.g. motor cycles), may be transported unpackaged in a cargo transport unit fitted out with the means to prevent toppling in transport, such as by the use of bracing, frames or racking.</li> </ul>		

(Reference document: informal document INF.51/Rev.1, as amended for the English version)

4.1.4.2, IBC02, IBC03, IBC05, IBC06, IBC07, IBC08, IBC100 Delete the numbers in front of the list in the row below the heading.

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 5)

4.1.4.2, IBC520 For UN 3109, in the entry for “tert-Butyl hydroperoxide, not more than 72 % with water”, remove the horizontal line between the rows for IBC types “31A” and “31HA1”.

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 10)

4.1.4.3, LP02 and LP906 Place the footnotes directly below the packing instruction, in those pages in which they appear.

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 3)

- 4.1.4.3, LP902 In the second row under the heading, insert “(1)” before “**Packaged articles:**” and remove the boldface, and insert “(2)” before “**Unpackaged articles:**” and remove the boldface.

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 5)

- 4.1.4.3, LP904 In the second row under the heading, before the numbered list, insert a new paragraph reading “Large packagings shall also meet the following requirements:”. In the list, renumber 1. to 5. as (a) to (e).

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 5)

- 4.1.4.3, LP906 In the second row under the heading, in the second sentence, replace “For a batteries” by “For batteries”.

(Reference document: ST/SG/AC.10/C.3/2022/76, proposal 10)

## Chapter 4.2

- 4.2.5.3 Add the following new portable tank special provision:

“TP42 Portable tanks are not authorized for the transport of caesium or rubidium dispersions.”

(Reference document: informal document INF.56)

## Chapter 6.2

- 6.2.1.6.1 In (d), replace “ISO 10461:2005 + A1:2006” by “ISO 10461:2005 + Amd:2006”.

(Reference document: ST/SG/AC.10/C.3/2022/60, proposal on editorial amendments)

- 6.2.2.1.1 In the table, in the row for ISO 9809-4:2014, replace “Until further notice” by “Until 31 December 2028”. Add a new row beneath this row as follows:

ISO 9809-4:2021	Gas cylinders – Design, construction and testing of refillable seamless steel gas cylinders and tubes – Part 4: Stainless steel cylinders with an Rm value of less than 1 100 MPa <i>NOTE: Small quantities are a batch of cylinders not exceeding 200</i>	Until further notice
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(Reference document: ST/SG/AC.10/C.3/2022/60, proposal 1)

- 6.2.2.1.1 and 6.2.2.1.2 In the table:

- In the row for ISO 11119-1:2012, replace “Until further notice” by “Until 31 December 2028”. Add a new row beneath this row as follows:

ISO 11119-1:2020	Gas cylinders — Design, construction and testing of refillable composite gas cylinders and tubes — Part 1: Hoop wrapped fibre reinforced composite gas cylinders and tubes up to 450 l	Until further notice
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- In the row for ISO 11119-2:2012, replace “Until further notice” by “Until 31 December 2028”. Add a new row beneath this row as follows:

ISO 11119-2:2020	Gas cylinders — Design, construction and testing of refillable composite gas cylinders and tubes — Part 2: Fully wrapped fibre reinforced composite gas cylinders and tubes up to 450 l with load-sharing metal liners	Until further notice
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- In the row for ISO 11119-3:2013, replace “Until further notice” by “Until 31 December 2028”. Add a new row beneath this row as follows:

ISO 11119-3:2020	Gas cylinders — Design, construction and testing of refillable composite gas cylinders and tubes — Part 3:	Until further notice
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	Fully wrapped fibre reinforced composite gas cylinders and tubes up to 450 l with non-load-sharing metallic or non-metallic liners or without liners	
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(Reference document: ST/SG/AC.10/C.3/2022/60, as amended)

6.2.2.3 Add the following new row at the end of the first table

ISO 23826:2021	Gas cylinders – Ball valves – Specification and testing	Until further notice
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(Reference document: ST/SG/AC.10/C.3/2022/60, proposal 2)

**Document ST/SG/AC.10/C.3/2022/75, Part I was adopted with the following modifications:**

Remove all the square brackets.

2.9.2 In the new section for “*Sodium ion batteries*”, for UN 3552, modify the name to read “SODIUM ION BATTERIES CONTAINED IN EQUIPMENT or SODIUM ION BATTERIES PACKED WITH EQUIPMENT, with organic electrolyte”.

In chapter 3.2, in the dangerous goods list:

- In the amendment to UN 1010, replace “XXX” by “402”.
- For the new UN 3552, modify column (2) to read “SODIUM ION BATTERIES CONTAINED IN EQUIPMENT or SODIUM ION BATTERIES PACKED WITH EQUIPMENT, with organic electrolyte”.

In chapter 3.3:

- In the new SP 401, replace “sodium-ion batteries” by “sodium-ion cells and batteries”.
- Renumber SP XXX as SP 402

In the table with new entries for the alphabetical index, add the following new entries:

SODIUM ION BATTERIES with organic electrolyte	9	3551
SODIUM ION BATTERIES CONTAINED IN EQUIPMENT, with organic electrolyte	9	3552
SODIUM ION BATTERIES PACKED WITH EQUIPMENT, with organic electrolyte	9	3552

6.1.4.12 Modify the heading to read “*Fibreboard boxes (including corrugated fibreboard boxes)*”.

(Reference document: informal document INF.39/Rev.1)

6.2.2.4 In the instruction under the table, replace “ISO 10461:2014 + Amd 1:2005” by “ISO 10461:2005 + Amd 1:2006”.

(Reference document: informal document INF.39/Rev.1)

6.2.2.11 In the new note, before “manufactured”, delete “constructed”.

(Reference document: informal document INF.39/Rev.1)

**Informal document INF.11 with additional amendments to the Spanish version was adopted.**

## II. Draft amendments to the Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.7 and Amend.1)

### Section 1

- 1.2.1.4.3 Amend the beginning of the first sentence to read “Self-reactive substances (type A to type G), organic peroxides (type A to type G) or polymerizing substances should not...”. In the first sentence, after “thermal decomposition”, add “or polymerization”.

*(Reference document: ST/SG/AC.10/C.3/2022/57, editorially revised)*

### Section 20

- 20.2.5 Amend the beginning of the first sentence to read “Any substance which shows the properties of a self-reactive substance (type A to type G), an organic peroxide (type A to type G) or a polymerizing substance should not...”. At the end, after “thermal decomposition”, add “or polymerization”.

*(Reference document: ST/SG/AC.10/C.3/2022/57, editorially revised)*

### Section 32

- 32.2.3 In the third sentence, after “60 °C”, delete “in a closed-cup test, or more than 65.6 °C in an open-cup test,”.

*(Reference document: ST/SG/AC.10/C.3/2022/52)*

- 32.4 Insert the following new paragraph under the heading:

“ It is recommended to use closed-cup test methods for the determination of the flash point. Open-cup test methods are acceptable for liquids which cannot be tested in closed-cup test methods (e.g., due to their viscosity) or when open-cup test data is already available. In these cases, 5.6 °C should be subtracted from the measured value, because open cup test methods generally result in higher values than closed-cup test methods.”

*(Reference document: ST/SG/AC.10/C.3/2022/52, as amended)*

### Section 33

- 33.2 Add a new note under the heading to read as follows:

**“NOTE:** *The term "metal powders" covers powders of metals or metal alloys.*”

- 33.2.4.3.1 In the second sentence, replace “powders of metals or metal-alloys” by “metal powders”.

- 33.2.4.4.1 In the second sentence, replace “Powders of metals or metal-alloys” by “Metal powders”.

- 33.2.4.4.2 In the second sentence, replace “powders of metals or metal-alloys” by “metal powders”.

*(Reference document: informal document INF.44)*

### Section 51

- 51.1.1 In the second sentence, before “sub-sections 16.4 and”, insert “sections 12 and 13 and”.

- 51.2.1 Amend to read as follows (footnote 1 is deleted):

- “51.2.1 Desensitized explosives are substances and mixtures in the scope of Chapter 2.1 of the GHS which are phlegmatized to suppress their explosive properties in such a manner that they meet the criteria as specified in 2.17.2 of the GHS and thus may be exempted from the hazard class "Explosives" (Chapter 2.1 of GHS).”
- 51.2.2 Amend to read as follows and renumber footnote 2 as 1:
- “51.2.2 Desensitized explosives should be tested:
- (a) For their exothermic decomposition energy<sup>1</sup>, if attempting to exit the class of desensitized explosives;
  - (b) In accordance with test 1 (a), test series 2 and 3 and tests 6 (a) and (b), respectively of this Manual and in accordance with the classification procedure in section 51.3, to preclude a mass explosion in the corrected burning rate test;
  - (c) In accordance with the corrected burning rate test; and
  - (d) Nitrocellulose should be tested in accordance with Appendix 10 of this Manual in order to be used in nitrocellulose mixtures.”
- 51.3.1 In the first sentence, replace “the test series 6 types 6 (a) and 6 (b) shall be performed in alphabetical order” by “tests as specified below should be performed to rule out the possibility of mass explosion”. In the second sentence, replace “The substances or mixtures” by “In accordance with test 6 (a), substances and mixtures”. Amend the third sentence to read: “If there is a positive result in test 6 (a), test 6 (b) should be performed with the same initiation system that caused the positive result in test 6 (a).”.
- 51.3.2 Amend to read as follows (second sentence becomes (e)):
- “51.3.2 It is not always necessary to conduct tests of all types:
- (a) Test series 3 may be waived if the explosive itself (i.e. before being phlegmatized) is not too sensitive or thermally unstable in accordance with test series 3.
  - (b) Test series 3 and tests 6 (a) and (b) may be waived if test series 2 has been passed.
  - (c) Test series 3 is not applicable to nitrocellulose mixtures containing no explosives other than nitrocellulose, for which the stability of the nitrocellulose has been established in accordance with Appendix 10.
  - (d) Tests 6 (a) and 6 (b) may be modified or waived in accordance with section 51.3.3.
  - (e) Test 6 (b) may be waived if in each type 6 (a) test:
    - (i) The exterior of the package is undamaged by internal detonation and/or ignition; or
    - (ii) The contents of the package fail to explode, or explode so feebly as would exclude propagation of the explosive effect from one package to another in test 6 (b).”
- 51.3.3 Amend to read as follows:
- “51.3.3 If a substance or mixture gives a negative result (no propagation of detonation) in test 1 (a), test 6 (a) with a detonator may be waived<sup>2</sup>. If a substance or mixture gives a negative result (no or slow deflagration) in test 2 (c), test 6 (a) with an igniter may be waived.”
- Renumber footnote 3 as 2 and replace “the type 1 (a) test” by “test 1 (a)” and “the Series 6 type 6(a) test” by “test 6 (a).”.

51.3.4 In the first sentence, replace “a test type 6 (b)” as “test 6 (b)”. In the second sentence, replace “Division 1.1” by “the class of explosives (see Chapter 2.1 of the GHS)”.

*(Reference document: ST/SG/AC.10/C.3/2022/50 as shown in informal document INF.4 and as amended by informal document INF.59)*

51.4.4.2 (b) Renumber footnote 4 as 3.

*(Consequential amendment)*

**Document ST/SG/AC.10/C.3/2022/75, Part II was adopted with the following modifications:**

Remove all the square brackets.

38.3.3 In the list of amendments to the renumbered 38.3.3.1 add the following new item:

“- Insert a new heading to read: “Testing of lithium cells and batteries”.”

*(Reference document: informal document INF.39/Rev.1)*

### III. Modifications to the sixth version of the Guiding Principles for the Development of the Model Regulations on the Transport of Dangerous Goods [English only]

Part 4, B.2 In table 4.2, add the following new entry:

3423	TETRAMETHYLAMMONIUM HYDROXIDE, SOLID	6.1	I	8
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(Reference document: informal document INF.54)

Part 4, C.2 Amend paragraph 7 to read as follows:

“7. When a specific portable tank instruction is specified in Column 10 for a specific dangerous goods entry, additional portable tanks with higher test pressures, greater shell thicknesses, more stringent bottom openings and pressure-relief device arrangements may be used, in accordance with the table in 4.2.5.2.5.”

After paragraph 7, insert the following new paragraph:

“8. Some of the portable tank instructions in the T1 to T22 range are currently unused. In other words, there are no substances in the dangerous goods list which have these instructions assigned to them. These portable tank instructions are nevertheless kept in the regulations, as portable tanks can be constructed and marked according to any of these portable tank instructions and used to transport substances with other codes, in accordance with the table in 4.2.5.2.5.”

Renumber subsequent paragraphs.

(Reference document: ST/SG/AC.10/C.3/2022/77, proposal 3)