



**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
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Annex I

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

Section 1.1.2

1.1.2 Add the following new sentence at the end of the paragraph under 1.1.2:

“Examples may also be listed within various test procedures. These are primarily to be used for purposes of illustration.”.

(Reference documents: ST/SG/AC.10/C.3/2013/17 and informal document INF.61 as amended)

1.1.3 Add a new section 1.1.3 to read as follows:

“1.1.3 In situations where the proper classification of substances and articles of certain Hazard Classes or Divisions for transport is the responsibility of the Competent Authority, it is normal and accepted practice that due consideration will be given to testing or classification results of other Competent Authorities when provided.”.

(Reference documents: ST/SG/AC.10/C.3/2013/17 and informal document INF.61)

Section 16.6.1

16.6.1.2 (h) Amend to read as follows:

“(h) Video equipment capable of recording the events necessary for classification. The type, number and placement of the camera(s) shall be sufficient to record all events to be assessed.”.

(Reference documents: ST/SG/AC.10/C.3/2013/27 and informal document INF.61)

16.6.1.3.1 Amend to read as follows:

“16.6.1.3.1 The required number of packages or unpackaged articles, in the condition and form in which they are offered for transport, are arranged as close as possible to one another on the metal grid. If directional effects are anticipated, packages or unpackaged articles should be oriented in such a way to maximize probability for projections to hit witness screens and for discrete flame jets to be pointed horizontally. If necessary, the packages or unpackaged articles may be encircled with a steel strip to support them during the test. Fuel is placed beneath the grid so that the fire will engulf the packages or unpackaged articles. Suitable methods of heating include a wood, liquid or gas fuel fire or a combination thereof, which achieves a temperature of 800 °C. Fluctuations of temperature below 800°C are normal and should not render the test invalid.”.

(Reference documents: ST/SG/AC.10/C.3/2013/27 and informal document INF.61)

16.6.1.3.2 Amend to read as follows:

“16.6.1.3.2 A wood fire should burn the packages or unpackaged articles with sufficient intensity and duration to completely react the explosives (see 16.6.1.2(e)). Dried pallets, boards, laths, or other wood alone or in combination may be stacked to form a lattice

beneath the grid 1 m off the ground, and up to the base of the grid supporting the packages or unpackaged articles. The wood should extend at least 1 m beyond the packages or unpackaged articles to ensure that the fire engulfs the product.”.

(Reference documents: ST/SG/AC.10/C.3/2013/27 and informal document INF.61 as amended)

16.6.1.3.5 Amend the first and second sentences to read as follows:

“The witness screens are erected vertically in each of three quadrants at a distance of 4 m from the edge of the packages or unpackaged articles. The sheets should be placed so that the centres are approximately level with the centre of the packages or unpackaged articles or, if this is less than 1.0 m above the ground, in contact with the ground.”.

(Reference documents: ST/SG/AC.10/C.3/2013/27 and informal document INF.61)

16.6.1.3.6 Amend the last sentence to read as follows:

“A safe waiting period, prescribed by the test agency, should be observed before approaching the test area.”.

(Reference documents: ST/SG/AC.10/C.3/2013/27 and informal document INF.61)

16.6.1.4.6 Amend to read as follows:

“16.6.1.4.6 If none of the events occur which would require the product to be assigned to Division 1.1, 1.2, 1.3 or 1.4 other than Compatibility Group S (see Box 32 of Figure 10.3), then the product is assigned to Division 1.4 Compatibility Group S, unless special provision 347 of Chapter 3.3 of the Model Regulations applies.”.

(Reference documents: ST/SG/AC.10/C.3/2013/27 and informal document INF.61 as amended)

Appendix 6

3.3 (c) Amend to read as follows:

“(c) For the organic substance or a homogenous mixture of organic substances containing chemical group (or groups) associated with explosive properties:

- when the exothermic decomposition energy is less than 500 J/g, or
- when the onset of exothermic decomposition is 500 °C or above

as indicated by Table A6.2.

Table A6.2 DECISION TO APPLY THE ACCEPTANCE PROCEDURE FOR CLASS 1 FOR AN ORGANIC SUBSTANCE OR A HOMOGENOUS MIXTURE OF ORGANIC SUBSTANCES

Decomposition energy (J/g)	Decomposition onset temperature (°C)	Apply acceptance procedure for Class 1? (Yes/No)
< 500	< 500	No
< 500	≥ 500	No
≥ 500	< 500	Yes
≥ 500	≥ 500	No

The exothermic decomposition energy may be determined using a suitable calorimetric technique (see 20.3.3.3); or”.

5.1 (a) Amend the reference to Table A6.2 to read “Table A6.3”.

5.1, Table A6.2 Renumber as A6.3.

(Reference documents: ST/SG/AC.10/C.3/2013/8 and informal document INF.61)

Annex II

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

Chapter 1.1

1.1.1.7 Add the following new sentence at the end of the paragraph under 1.1.1.7: “The requirements of the standard that do not conflict with these Regulations shall be applied as specified, including the requirements of any other standard, or part of a standard, referenced within that standard as normative.”.

(Reference document: *ST/SG/AC.10/C.3/2013/4 as amended*)

Chapter 1.2

1.2.1 Add the following new definitions in alphabetical order:

“*Design life*, for composite cylinders, means the maximum life (in number of years) to which the cylinder is designed and approved in accordance with the applicable standard;”.

“*Service life*, for composite cylinders, means the number of years the cylinder is permitted to be in service;”

(Reference documents: *ST/SG/AC.10/C.3/2013/9 and informal document INF.57*)

Chapter 2.1

2.1.1.4 (f) Insert the word “predominantly” after “articles which”. Delete the word “only” before “extremely insensitive”.

(Reference document: *Informal document INF.61*)

2.1.2.1.1 Amend the description for Compatibility Group N to read as follows: “Articles predominantly containing extremely insensitive substances”.

(Reference documents: *Informal documents INF.40 and INF.61*)

Chapter 2.5

2.5.3.2.4 In the table, amend the entries listed below as follows:

<i>Organic peroxide</i>		<i>Column</i>	<i>Amendment</i>
DIBENZOYL PEROXIDE	(first row)	Concentration (%)	Replace ">51 - 100" with ">52 - 100"
tert-BUTYL CUMYL PEROXIDE	(first row)	Number (Generic entry)	Replace "3107" with "3109"

<i>Organic peroxide</i>		<i>Column</i>	<i>Amendment</i>
DICETYL PEROXYDICARBONATE	(first row)	Packing Method	Replace "OP7" with "OP8"
DICETYL PEROXYDICARBONATE	(first row)	Number (Generic entry)	Replace "3116" with "3120"
tert-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE	(first row)	Concentration (%)	Replace ">32-100" with ">37-100"
tert-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE	(third row)	Concentration (%)	Replace " ≤ 32 " with " ≤ 37 "
tert-BUTYL PEROXY-3,5,5-TRIMETHYLHEXANOATE	(third row)	Diluent type B (%)	Replace " ≥ 68 " with " ≥ 63 "

(Reference documents: ST/SG/AC.10/C.3/2013/1 and informal document INF.3)

Chapter 3.2

Dangerous Goods List

UN Nos. 1006, 1013, 1046, 1056, 1065, 1066, 1956, 2036 Add "378" in column (6).

(Reference document: Informal document INF.53/Rev.1)

Chapter 3.3

SP 327 In the second sentence, insert "movement and" after "protected against".

(Reference documents: ST/SG/AC.10/C.3/2013/7 and informal document INF.56)

SP 361 Amend subparagraph (e) to read as follows:

"(e) Capacitors manufactured after 31 December 2013, shall be marked with the energy storage capacity in Wh."

(Reference document: ST/SG/AC.10/C.3/2013/34 as amended)

SP 370 In the second indent, replace "that is not too sensitive for acceptance into Class 1." with "that gives a positive result".

(Reference document: ST/SG/AC.10/C.3/2013/15, second option)

SP 372 Amend subparagraph (c) to read as follows:

"(c) Capacitors manufactured after 31 December 2015, shall be marked with the energy storage capacity in Wh."

(Reference document: ST/SG/AC.10/C.3/2013/34 as amended)

Add the following new special provision:

"378 Radiation detectors containing this gas in non-refillable pressure receptacles not meeting the requirements of Chapter 6.2 and packing instruction P200 of 4.1.4.1 may be transported under this entry provided:

- (a) The working pressure in each receptacle does not exceed 50 bar;

- (b) The receptacle capacity does not exceed 12 litres;
- (c) Each receptacle has a minimum burst pressure of at least 3 times the working pressure when a relief device is fitted and at least 4 times the working pressure when no relief device is fitted;
- (d) Each receptacle is manufactured from material which will not fragment upon rupture;
- (e) Each detector is manufactured under a registered quality assurance programme;

Note: ISO 9001:2008 may be used for this purpose.

- (f) Detectors are transported in strong outer packagings. The complete package shall be capable of withstanding a 1.2 metre drop test without breakage of the detector or rupture of the outer packaging. Equipment that includes a detector shall be packed in a strong outer packaging unless the detector is afforded equivalent protection by the equipment in which it is contained; and
- (g) The transport document includes the following statement "Transport in accordance with special provision 378".

Radiation detectors, including detectors in radiation detection systems, are not subject to any other requirements of these Regulations if the detectors meet the requirements in (a) to (f) above and the capacity of detector receptacles does not exceed 50 ml."

(Reference document: Informal document INF.53/Rev.1)

Chapter 4.1

4.1.4.1, P200 (2) Amend to read as follows:

"(2) The following three tables cover compressed gases (Table 1), liquefied and dissolved gases (Table 2) and substances not in Class 2 (Table 3). They provide:

- (a) The UN number, name and description, and classification of the substance;
- (b) The LC₅₀ for toxic substances;
- (c) The types of pressure receptacles authorised for the substance, shown by the letter "X";
- (d) The maximum test period for periodic inspection of the pressure receptacles.

NOTE: *For pressure receptacles which make use of composite materials, the maximum test period shall be 5 years. The test period may be extended to that specified in Tables 1 and 2 (i.e. up to 10 years), if approved-by the competent authority of the country of use.*

- (e) The minimum test pressure of the pressure receptacles;
- (f) The maximum working pressure of the pressure receptacles for compressed gases (where no value is given, the working pressure shall not exceed two thirds of the test pressure) or the

maximum filling ratio(s) dependent on the test pressure(s) for liquefied and dissolved gases;

- (g) Special packing provisions that are specific to a substance."

(Reference documents: ST/SG/AC.10/C.3/2013/9 and informal document INF.57)

4.1.4.1, P200 (4) u Replace "ISO 7866:1999" with "ISO 7866:2012".

(Reference document: ST/SG/AC.10/C.3/2013/16)

4.1.4.1, P207 In the last sentence before the special packing provision, insert the word "excessive" after "to prevent".

(Reference documents: ST/SG/AC.10/C.3/2013/7 and informal document INF.56)

4.1.4.1, P208 (1) Amend to read as follows:

"(1) The following packagings are authorized provided the general packing requirements of 4.1.6.1 are met:

(a) Cylinders constructed as specified in 6.2.2 and in accordance with ISO 11513:2011 or ISO 9809-1:2010; and

(b) Cylinders constructed before 1 January 2016 in accordance with 6.2.3 and a specification approved by the competent authorities of the countries of transport and use."

(Reference document: Informal document INF.52)

4.1.4.3, LP02 In L2, insert a new second sentence to read as follows: "The large packagings shall be designed and constructed to prevent dangerous movement of the aerosols and inadvertent discharge during normal conditions of transport."

(Reference documents: ST/SG/AC.10/C.3/2013/7 and informal document INF.56)

4.1.4.2

IBC520 Add the following new entries:

UN No.	Organic peroxide	Type of IBC	Maximum quantity (litres)	Control temperature	Emergency Temperature
3109	tert-Butyl cumyl peroxide	31HA1	1000		
3119	1,1,3,3-Tetramethylbutyl peroxy-2-ethylhexanoate, not more than 67%, in diluent type A	31HA1	1000	+15 °C	+20 °C

IBC520 For UN No. 3119, in the entry for "Di-(2-ethylhexyl) peroxydicarbonate, not more than 62%, stable dispersion, in water", add the following new row:

Type of IBC	Maximum quantity (litres)	Control temperature	Emergency Temperature
31HA1	1000	-20 °C	-10 °C

(Reference documents: ST/SG/AC.10/C.3/2013/1 and informal document INF.3)

4.1.6.1.2 Replace “ISO 11114-2:2000” with “ISO 11114-2:2013”.

(Reference document: ST/SG/AC.10/C.3/2013/16)

Chapter 6.2

6.2.2.1.1 In the table, for ISO 7866:1999, in the column “Applicable for manufacture”, replace “Until further notice” with “Until 31 December 2020”.

After the entry for ISO 7866:1999, insert a new entry to read as follows:

ISO 7866: 2012	Gas cylinders – Refillable seamless aluminium alloy gas cylinders – Design, construction and testing <i>NOTE: Aluminium alloy 6351A or equivalent shall not be used.</i>	Until further notice
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(Reference document: ST/SG/AC.10/C.3/2013/16)

6.2.2.1.1, Note 1 Replace “unlimited service life” with “a design life of not less than 15 years.”.

(Reference documents: ST/SG/AC.10/C.3/2013/9 and informal document INF.57)

6.2.2.1.1 Amend Note 2 to read as follows:

“NOTE 2: Composite cylinders with a design life longer than 15 years shall not be filled after 15 years from the date of manufacture, unless the design has successfully passed a service life test programme. The programme shall be part of the initial design type approval and shall specify inspections and tests to demonstrate that cylinders manufactured accordingly remain safe to the end of their design life. The service life test programme and the results shall be approved by the competent authority of the country of approval that is responsible for the initial approval of the cylinder design. The service life of a composite cylinder shall not be extended beyond its initial approved design life.”.

(Reference documents: ST/SG/AC.10/C.3/2013/9 and informal document INF.57)

6.2.2.2 In the table, replace the entry for “ISO 11114-2:2000” with the following entry:

ISO 11114-2:2013	Gas cylinders – Compatibility of cylinder and valve materials with gas contents – Part 2: Non-metallic materials
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(Reference document: ST/SG/AC.10/C.3/2013/16)

6.2.2.7.4 Insert the following new subparagraphs and note at the end:

- “(q) For composite cylinders having a limited design life, the letters “FINAL” followed by the design life shown as the year (four digits) followed by the month (two digits) separated by a slash (i.e. “/”).
- (r) For composite cylinders having a limited design life greater than 15 years and for composite cylinders having non-limited design life, the letters “SERVICE” followed by the date 15 years from the date of manufacture (initial inspection) shown as the year (four digits) followed by the month (two digits) separated by a slash (i.e. “/”).

NOTE: Once the initial design type has passed the service life test programme requirements in accordance with 6.2.2.1.1 NOTE 2, future production no longer requires this initial service life mark. The initial service

life mark shall be made unreadable on cylinders of a design type that has met the service life test programme requirements.”.

(Reference documents: ST/SG/AC.10/C.3/2013/9 and informal document INF.57)

6.2.2.7.5 Add the following text at the end of the first indent: "...except for the marks described in 6.2.2.7.4 (q) and (r) which shall be adjacent to the periodic inspection and test marks of 6.2.2.7.7.”.

(Reference documents: ST/SG/AC.10/C.3/2013/9 and informal document INF.57)

Chapter 6.7

6.7.2.19.8 (a) and 6.7.3.15.8 (a) Add a new last sentence to read as follows:

“The wall thickness shall be verified by appropriate measurement if this inspection indicates a reduction of wall thickness.”.

(Reference documents: ST/SG/AC.10/C.3/2013/6 and informal document INF.59/Rev.1)

6.7.5.2.4 (a) Replace “ISO 11114-2:2000” with “ISO 11114-2:2013”.

(Reference document: ST/SG/AC.10/C.3/2013/16)

Chapter 7.1

7.1.3.2.3 Insert the phrase“, ammonium nitrate emulsion or suspension or gel (UN 3375)” after “(UN Nos. 1942 and 2067)”.

(Reference documents: ST/SG/AC.10/C.3/2013/12 and informal document INF.61)

Annex III

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

Chapter 1.1, 1.1.1.9, after sub-paragraph (c)

Insert a new sub-paragraph (d) to read as follows:

"(d) Lamps containing only gases of Division 2.2 (according to 2.2.2.1) provided they are packaged so that the projectile effects of any rupture of the bulb will be contained within the package."

Chapter 1.5, 1.5.1.5.1 (a), before "5.1.3.2,"

Insert "5.1.2,".

Chapter 2.2, 2.2.2.4

Delete the last indent and add a Note at the end to read:

"NOTE: This exemption does not apply to lamps. For lamps see 1.1.1.9."

Chapter 2.4, 2.4.4.1

Replace "light bulbs" by "lamps".

Chapter 2.5, 2.5.2.3.1.1, at the end of the second sentence

After "sub-section 34.4.2" insert "(Test O.2)".

Chapter 2.7, 2.7.2.3.2, at the end of sub-paragraphs (a) (ii) and (b) (ii)

Insert "or".

Chapter 3.3, special provision 225, in the second sentence

For "according to the provisions of" read "according to the provisions applied in".

Chapter 3.3, special provision 225, in the third sentence, before the indents

For "comprise" read "include".

Chapter 3.3, special provision 371, in (1) (g)

For "a single package test" read "the following test".

Chapter 3.3, special provision 373 (c) (i)

For "housed" read "contained".

Chapter 3.3, special provision 373 (c) (ii)

For "housing" read "casing".

Chapter 3.3, special provision 373

Transfer the sentence "Packing instruction P200 of 4.1.4.1 is not applicable." before the paragraph reading "The transport document shall include the following statement "Transport in accordance with special provision 373".

Chapter 3.4, last paragraph, fourth sentence

For “width of line forming” read “width of the line forming”.

Chapter 4.1, 4.1.4.1, P114 (b), under "Inner packagings", "Receptacles"

Insert "Plastics".

Chapter 4.1, 4.1.4.1, P208 (2)

Before “less than 300 kPa” insert “and”.

Chapter 4.1, 4.1.4.1, P208 (13), special packing provision b

Rename as d.

Chapter 4.1, 4.1.4.1, P505, under Single packagings

For

Drums

aluminium (1B1, 1B2), plastics (1H1, 1H2) 250 1

Jerricans

aluminium (3B1, 3B2), plastics (3H1, 3H2) 60 1

Read

Drums

aluminium (1B1, 1B2) 250 1

plastics (1H1, 1H2) 250 1

Jerricans

aluminium (3B1, 3B2) 60 1

plastics (3H1, 3H2) 60 1

Chapter 4.1, 4.1.4.1, P805 (a)

For “plastic” read “plastics”.

Chapter 4.1, 4.1.4.3, LP904, 1.

For “packed in inner packaging” read “packed in an inner packaging”.

Chapter 4.1, 4.1.9.3

After “4.1.9.3” insert “*Packages containing fissile material*”.

Chapter 5.2, 5.2.1.5.5

For "marked on the outside of the packaging" read "marked on the outside of the package".

Chapter 5.3, 5.3.2.2

Not applicable to English.

Chapter 5.4, 5.4.1.5.8

After “BK(x)”, add a reference to footnote *. The footnote reads as follows: “x shall be replaced with “1” or “2” as appropriate.”.

Chapter 5.5, 5.5.3.6.2, caption of the warning mark

Not applicable to English.

Chapter 5.5, 5.5.3.6.2, note * under the warning mark

Not applicable to English.

Chapter 5.5, 5.5.3.7.1

For “containing or have contained substances” read “containing or having contained substances”.

Chapter 6.2, 6.2.4, in the heading

For "containing liquefied gas" read "containing liquefied flammable gas".

Chapter 6.2, 6.2.4.2, at the end

After “or 6.2.4.2.3” insert “are met”.

Chapter 6.8, 6.8.4.6, footnote 1

For “x should be replaced” read “x shall be replaced”.

Annex IV

Proposed amendments to the fifth revised edition of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Chapter 2.1

2.1.4.2.2 (c): Amend to read as follows:

“(c) For the organic substance or a homogenous mixture of organic substances containing chemical group (or groups) associated with explosive properties:

- when the exothermic decomposition energy is less than 500 J/g, or
- when the onset of exothermic decomposition is 500 °C or above

as indicated by Table 2.1.3.

Table 2.1.3 DECISION TO APPLY THE ACCEPTANCE PROCEDURE FOR CLASS 1 FOR AN ORGANIC SUBSTANCE OR A HOMOGENOUS MIXTURE OF ORGANIC SUBSTANCES

Decomposition energy (J/g)	Decomposition onset temperature (°C)	Apply acceptance procedure for Class 1? (Yes/No)
< 500	< 500	No
< 500	≥ 500	No
≥ 500	< 500	Yes
≥ 500	≥ 500	No

The exothermic decomposition energy may be determined using a suitable calorimetric technique; or”.

(Reference documents: ST/SG/AC.10/C.3/2013/18 and informal document INF.61)
