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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-eighth session

held in Geneva from 30 November to 9 December 2015

Addendum

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Annex I

Draft amendments to the 6th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria

Appendix 6

Insert a section 5.2 to read as follows:

“5.2 Substances which may be polymerizing substances (Division 4.1)

Provided that the substance is not intended for polymerization, the classification procedure for polymerizing substances need not be applied if:

(a) The chemical structure of the substance contains no double or triple bonds or strained rings; or

(b) The compound contains double or triple bonds or strained rings, and the molecular mass M(CHON) counting only the elements C, H, O and N is more than 150; or

(c) The compound is solid with a melting point above 50 °C.”.

Renumber the existing sections 5.2 and 5.3 as 5.3 and 5.4.

*(Reference document: ST/SG/AC.10/C.3/2015/36 as amended by informal document INF.55)*

[Appendix 7

Amend the title of the appendix to read as follows: “FLASH COMPOSITION TESTS”. Insert a new subtitle to read: “1. HSL Flash Composition Test”. Renumber existing paragraphs accordingly.

In 1.1 (former 1), after “fireworks, that are used” insert “in waterfalls, or”. In the second sentence, replace “lifting” by “propellant”.

In 1.2.2 (former 2.2), replace “vessel is closed by an aluminium bursting” by “vessel is closed by a brass or aluminium bursting”. In the last sentence, after “lead washer” insert “or a washer of a suitable deformable material (for example, polyoxymethylene)”.

In 1.4 (former 4), after “used in waterfalls,” insert “or to produce an aural effect,”. Replace “lifting” by “propellant”. Amend the table to read as follows:

“

| *Composition (mass %)* | *Use or*  *effect* | *Minimum time for a pressure rise from 690 to 2 070 kPa (ms)* | *Result* |
| --- | --- | --- | --- |
| Potassium perchlorate/Aluminium (77/23) | Aural (report) | 0.48 | Flash composition |
| Potassium perchlorate/ Barium nitrate/ Aluminium /Magnalium (20/20/45/15) | Aural  (report) | 2.15 | Flash composition |
| Potassium perchlorate /Potassium benzoate (71/29) | Aural  (whistle) | 0.89 | Flash composition |
| Potassium perchlorate /Potassium hydrogen terephthalate /Titanium (62/25/13) | Aural  (whistle) | 1.67 | Flash composition |
| Potassium perchlorate /Aluminium (P2000)/Aluminium (P50) (53/16/31) | Waterfall | 2.73 | Flash composition |
| Potassium perchlorate /Aluminium (P2000)/Aluminium (P50)/ Antimony sulphide (50/15/30/5) | Waterfall | 1.19 | Flash composition |
| Potassium perchlorate/Charcoal (80/20) | Bursting | 0.85 | Flash composition |
| Potassium perchlorate/Charcoal (60/40) | Bursting | 2.80 | Flash composition |
| Potassium perchlorate/Charcoal (50/50) | Bursting | 9.26 | Not flash composition |
| Potassium perchlorate/ Potassium nitrate /Charcoal (53/26/21) | Bursting | 1.09 | Flash composition |
| Potassium perchlorate/ Potassium nitrate /Charcoal (53/26/21) (Cottonseed core) | Bursting | 7.39 | Not flash composition |
| Potassium perchlorate/Charcoal /Aluminium (59/23/18) | Bursting | 1.14 | Flash composition |

”.

Insert a new section 2 to read as follows:

“2. US Flash Composition Test

2.1 *Introduction*

This test may be used to determine if pyrotechnic substances in powder form or as pyrotechnic units as presented in fireworks that are used in waterfalls, or to produce an aural effect or used as a bursting charge or propellant charge, may be considered a “flash composition” for the purposes of the default fireworks classification table in 2.1.3.5.5 of the Model Regulations.

2.2 *Apparatus and materials*

The experimental set up consists of:

A cardboard or fibreboard sample tube with a minimum inside diameter of 25 mm and a maximum height of 154 mm with a maximum wall thickness of 3.8 mm, closed at the base with a thin cardboard or paperboard disk, plug or cap just sufficient to retain the sample;

A 1.0 mm thick 160 × 160 mm witness plate consisting of steel conforming to specification S235JR (EN10025) or ST37-2 (DIN17100) or SPCC (JIS G 3141) or equivalent having a stretch limit (or rupture strength) of 185-355 N/mm2, an ultimate tensile strength of 336 - 379 N/mm2 and a percentage elongation after fracture of 26-46% ;

An electric igniter, e.g. a fuse head, with lead wires of at least 30 cm in length;

A mild steel confinement sleeve (weighing approximately 3 kg) having an outside diameter of 63 mm and a minimum length of 165 mm with a flat-bottomed round bore whose interior dimensions for diameter and depth are 38 mm and 155 mm, respectively, and a notch or groove cut into one radius of the open end sufficient to allow the igniter lead wires to pass through (the steel sleeve might be provided with a rugged steel handle for easier handling);

A steel ring of approximately 50 mm height with an inner diameter of 95 mm; and

A solid metal base, e.g. a plate of approximately 25 mm in thickness and 150 mm square.

2.3 *Procedure*

2.3.1 Prior to testing, the pyrotechnic substance is stored for at least 24 hours in a desiccator at a temperature of 20-30 °C. Twenty-five (25) g net mass of the pyrotechnic substance to be tested as a loose powder or granulated or coated onto any substrate, is pre-weighed and then poured carefully into a fibreboard sample tube with the bottom end closed with a cardboard or paperboard disk, cap or plug. After filling, the top cardboard or paperboard disk, cap or plug might be inserted lightly to protect the sample from spillage during transport to the test stand. The height of the sample substance in the tube will vary depending on its density. The sample should be first consolidated by lightly tapping the tube on a non-sparking surface. The final density of the pyrotechnic substance in the tube should be as close as possible to the density achieved when contained in a fireworks device.

2.3.2 The witness plate is placed on the supporting ring. If present, the paperboard or cardboard top disk, cap or plug of the fibreboard sample tube is removed and the electric igniter is inserted into the top of the pyrotechnic substance to be tested and visually positioned to an approximate depth of 10 mm. The paperboard or cardboard top disk, cap or plug is then inserted or re-inserted, fixing the igniter's position in the fibreboard sample tube and the depth of its match head. The lead wires are bent over and down along the sidewall and bent away at the bottom. The sample tube is placed vertically and centred on the witness plate. The steel sleeve is placed over the fibreboard sample tube. The igniter lead wires are positioned to pass through the slotted groove in the bottom edge of the steel confining sleeve and will be ready to attach to the firing circuit apparatus. Finally, the alignment of the steel sleeve and the witness plate is corrected so that their centres are aligned with the centre of the steel ring. See Figure A7.10 as an example of the test set-up. The cardboard or paperboard disk, cap or plug at the bottom end of the sample tube should be placed properly to avoid air gap between the witness plate and the bottom end of the substance to be tested.

2.3.3 The electric igniter is then initiated from a safe position. After initiation and a suitable interval the witness plate is recovered and examined. The test should be performed 3 times unless a positive result is obtained earlier.

2.4 *Test criteria and method of assessing results*

The result is considered positive “+” and the pyrotechnic substances in powder form or as pyrotechnic units as presented in the fireworks, that are used in waterfalls, or to produce an aural effect, or used as a bursting charge or lifting charge, is to be considered as flash composition if:

(a) In any trial the witness plate is torn, perforated, pierced or penetrated; or;

(b) The average of the maximum depths of indented witness plates from all three trials exceeds 15 mm.

Examples of results

| *Composition (mass %)* | *Use or*  *effect* | *Observation of witness plate or averaged depth of indentation (mm)* | *Result* |
| --- | --- | --- | --- |
| Potassium perchlorate/Aluminium (77/23) | Aural (report) | Pierced | Flash composition |
| Potassium perchlorate/Barium nitrate/Aluminium/Magnalium (20/20/45/15) | Aural  (report) | 11.3 | Not flash composition |
| Potassium perchlorate/Potassium benzoate  (71/29) | Aural  (whistle) | Pierced | Flash composition |
| Potassium perchlorate/Potassium hydrogen terephthalate /Titanium (62/25/13) | Aural  (whistle) | Pierced | Flash composition |
| Potassium perchlorate/Aluminium (P2000)/Aluminium (P50) (53/16/31) | Waterfall | Pierced | Flash composition |
| Potassium perchlorate/Aluminium (P2000)/Aluminium (P50)/Antimony sulphide  (50/15/30/5) | Waterfall | Pierced | Flash composition |
| Potassium perchlorate/Charcoal (80/20) | Bursting | Pierced | Flash composition |
| Potassium perchlorate/Charcoal (60/40) | Bursting | 17.7 | Flash composition |
| Potassium perchlorate/Charcoal (50/50) | Bursting | 6.7 | Not flash composition |
| Potassium perchlorate/Potassium nitrate /Charcoal (53/26/21) | Bursting | Torn | Flash composition |
| Potassium perchlorate/Potassium nitrate /Charcoal (53/26/21) (Cottonseed core) | Bursting | 12.7 | Not flash composition |
| Potassium perchlorate/Charcoal/Aluminium  (59/23/18) | Bursting | Pierced | Flash composition |



|  |  |
| --- | --- |
| 1. Cardboard or fibreboard sample tube | 1. Steel witness plate |
| 1. Electric igniter | 1. Mild steel confinement sleeve |
| 1. Steel ring | 1. Solid metal base |
| 1. Substance to be tested | 1. Cardboard or paperboard disk, cap or plug |
| 1. Groove in sleeve for igniter wires | 1. Handle welded on (optional) |

**Figure A7.10”]**

*(Reference documents: ST/SG/AC.10/C.3/2015/34 and informal document INF.53)*

Annex II

Draft amendments to the 19th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations

Chapter 2.1

[2.1.3.5.1 (a) Replace “giving a positive result when tested in one of the HSL Flash composition tests in Appendix 7 of the Manual of Tests and Criter*ia”* by “containing flash composition (see Note 2 of 2.1.3.5.5)”.]

*(Reference documents: ST/SG/AC.10/C.3/2015/34 and informal document INF.53)*

[2.1.3.5.5 Amend Note 2 to read as follows:

*“****NOTE 2*:** *“Flash composition” in this table refers to pyrotechnic substances in powder form or as pyrotechnic units as presented in the firework that are used in waterfalls, or to produce an aural effect or used as a bursting charge, or propellant charge unless:*

(a) *The time taken for the pressure rise in the HSL Flash Composition Test in Appendix 7 of the Manual of Tests and Criteria is demonstrated to be more than 6* *ms for 0.5* *g of pyrotechnic substance; or*

*(b) The pyrotechnic substance gives a negative “-” result in the US Flash Composition Test in Appendix 7 of the Manual of Tests and Criteria.*”.]

*(Reference documents: ST/SG/AC.10/C.3/2015/34 and informal document INF.53)*

[2.1.3.5.5 In the table, amend the waterfall entry as follows: For classification 1.1G, amend the entry under “Specification” to read: “containing flash composition regardless of the results of Test Series 6 (see 2.1.3.5.1 (a))”. For classification 1.3G, amend the entry under “Specification” to read: “not containing flash composition”.]

*(Reference documents: ST/SG/AC.10/C.3/2015/34 and informal document INF.53)*

Chapter 2.4

2.4.2.3.2.3 At the end of the first paragraph, add a new sentence to read as follows: “The formulations listed in packing instruction IBC520 of 4.1.4.2 and in portable tank instruction T23 of 4.2.5.2.6 may also be transported in packagings of OP8 (see packing instruction P520 of 4.1.4.1), with the same control- and emergency temperatures, if applicable.”.

*(Reference document: Informal document INF.50)*

2.4.2.3.2.3 Add a new entry to read as follows:

| *SELF-REACTIVE SUBSTANCE* | *Concentration (%)* | *Packing method* | *Control tempe-rature*  *(°C)* | *Emergency temperature*  *(°C)* | *UN generic entry* | *Remarks* |
| --- | --- | --- | --- | --- | --- | --- |
| Phosphorothioic acid, O-[(cyanophenyl methylene) azanyl] O,O-diethyl ester | 82-91  (Z isomer) | OP8 |  |  | 3227 | (10) |

*(Reference document: ST/SG/AC.10/C.3/2015/35)*

After the table, add a new remark (10) to read as follows:

"(10) This entry applies to the technical mixture in n-butanol within the specified concentration limits of the (Z) isomer.".

*(Reference documents: ST/SG/AC.10/C.3/2015/35)*

Chapter 2.5

2.5.3.2.4 At the end of the first paragraph, add a new sentence to read as follows: "The formulations listed in packing instruction IBC520 of 4.1.4.2 and in portable tank instruction T23 of 4.2.5.2.6 may also be transported in packagings of OP8 (see packing instruction P520 of 4.1.4.1), with the same control- and emergency temperatures, if applicable.".

*(Reference document: Informal document INF.50)*

2.5.3.2.4 Insert the following new entries:

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| *Organic peroxide* | *(2)* | *(3)* | *(4)* | *(5)* | *(6)* | *(7)* | *(8)* | *(9)* | *(10)* | *(11)* |
|  |  |  |  |  |  |  |  |  |  |  |
| Diisobutyryl peroxide | ≤ 42 (as a stable dispersion in water) |  |  |  |  | OP8 | -20 | -10 | 3119 |  |
| Di-(4-tert-butylcyclohexyl) peroxydicarbonate | ≤42 (as a paste) |  |  |  |  | OP7 | 35 | 40 | 3116 |  |
| 1-phenylethyl hydroperoxide | ≤38 |  | ≥62 |  |  | OP8 |  |  | 3109 |  |

*(Reference documents: ST/SG/AC.10/C.3/2015/37)*

Chapter 2.9

[2.9.4 Add a new subparagraph (f) to read as follows:

“(f) Lithium batteries, containing both primary lithium metal cells and rechargeable lithium ion cells, [that are not designed to be externally charged] (see special provision 387) shall meet the following conditions:

[(i) It is not designed to be externally charged;]

(i)/[ii] The rechargeable lithium ion cells can only be charged from the primary lithium metal cells;

(ii)/[iii] Overcharge of the rechargeable lithium ion cells is precluded by design;

(iii)/[iv] The battery has been tested as a lithium primary battery;

(iv)/[v] Component cells of the battery shall be of a type proved to meet the respective testing requirements of the Manual of Tests and Criteria, part III, sub-section 38.3.”.]

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

Chapter 3.2, Dangerous goods list

For UN Nos. 1363, 1386, 1398, 1435, 2071, 2216, 2217 and 2793, in column (10), insert “BK2”

*(Reference documents: ST/SG/AC.10/C.3/2015/31 and informal document INF.11 as amended)*

[For UN Nos. 3090, 3091, 3480 and 3481, in column (6) insert “387”.]

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

For UN No. 3316, delete the entry corresponding to packing group III. In the remaining entry, in column (5), delete “II”.

*(Reference document: Informal document INF.63)*

Add the following entry:

| (1) | (2) | (3) | (4) | (5) | (6) | (7a) | (7b) | (8) | (9) | (10) | (11) |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 3535 | TOXIC SOLID, FLAMMABLE, INORGANIC, N.O.S. | 6.1 | 4.1 | I | 274 | 0 | E5 | P002 IBC99 |  | T6 | TP33 |
| 3535 | TOXIC SOLID, FLAMMABLE, INORGANIC, N.O.S. | 6.1 | 4.1 | II | 274 | 500 g | E4 | P002 IBC08 | B2, B4 | T3 | TP33 |

*(Reference documents: ST/SG/AC.10/C.3/2015/32 as amended)*

Chapter 3.3

Special provision 188 (f): At the end, add two new sentences to read as follows: "When packages are placed in an overpack, the lithium battery mark shall either be clearly visible or be reproduced on the outside of the overpack and the overpack shall be marked with the word “OVERPACK”. The lettering of the “OVERPACK” mark shall be at least 12 mm high.".

*(Reference documents: ST/SG/AC.10/C.3/2015/29)*

[Special provision 188 (i): At the end of the second paragraph, add the following sentence: "As used in this special provision “equipment” means apparatus for which the lithium cells or batteries will provide electrical power for its operation.".]

*(Reference documents: ST/SG/AC.10/C.3/2015/52)*

Special provision 251: Amend as follows:

In the first paragraph, replace the last sentence by:

“Such kits shall only contain dangerous goods that are permitted as:

1. Excepted quantities not exceeding the quantity indicated by the code in column (7b) of the Dangerous Goods List of Chapter 3.2, provided that the net quantity per inner packaging and net quantity per package are as prescribed in 3.5.1.2 and 3.5.1.3; or;
2. Limited quantities as indicated in column (7a) of the Dangerous Goods List of Chapter 3.2, provided that the net quantity per inner packaging does not exceed 250 ml or 250 g.”.

In the second paragraph, delete the last sentence.

In the third paragraph, insert a first sentence to read as follows:

“For the purposes of completion of the dangerous goods transport document as set out in 5.4.1.4.1, the packing group shown on the document shall be the most stringent packing group assigned to any individual substance in the kit.”.

*(Reference document: Informal document INF.63)*

3.3.1 Insert a new special provision to read as follows:

[“387 Lithium batteries in conformity with 2.9.4 (f) containing both primary lithium metal cells and rechargeable lithium ion cells shall be assigned to UN Nos. 3090 or 3091 as appropriate. When such batteries are transported in accordance with special provision 188 the total lithium content of all lithium metal cells contained in the battery shall not exceed [1 g/2 g] and the total capacity of all lithium ion cells contained in the battery shall not exceed [20 Wh/40 Wh.]”.]

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

Chapter 4.1

[4.1.4.1, packing instruction P200, paragraph (3) (e), amend as follows:

In the first paragraph, replace “liquid phase” by “liquefied gas”.

In subparagraph (i), replace “liquid component” by “liquefied gas”.

In subparagraph (iv), replace “liquid component” by “liquefied gas”.

In subparagraph (v), replace “liquid component” by “liquefied gas”.

In the last paragraph, replace “liquid component” by “liquid phase”.]

*(Reference document: Informal document INF.52)*

4.1.4.1, packing instruction P901: Under the heading “Additional requirements”, delete “not exceed either 250 ml or 250 g and shall”.

*(Reference document: Informal document INF.63)*

[4.1.4.1, packing instruction P903: Before the introductory sentence that starts "The following packagings…", insert a new sentence to read as follows: "For the purpose of this packing instruction, “equipment” means apparatus for which the lithium cells or batteries will provide electrical power for its operation.".

4.1.4.1, packing instruction P903 (3): Delete the last sentence.]

*(Reference documents: ST/SG/AC.10/C.3/2015/52)*

[4.1.4.1, packing instruction P906 (2): Replace “devices” by “articles”.]

*(Reference document: Informal document INF.7)*

4.1.4.2, packing instruction IBC 520: In the second line, after "4.1.7.2.", insert a new sentence to read as follows: "The formulations listed below may also be transported in packagings of OP8 (see packing instruction P520 of 4.1.4.1), with the same control- and emergency temperatures, if applicable.".

*(Reference documents: ST/SG/AC.10/C.3/2015/37)*

4.1.4.2, packing instruction IBC 520: For UN No. 3109, under the entry "tert-Butyl hydroperoxide, not more than 72% solution with water", add a new line to read:

|  |  |  |  |
| --- | --- | --- | --- |
| *Type of IBC* | *Maximum quantity (litres)* | *Control temperature* | *Emergency Temperature* |
| 31HA1 | 1 000 |  |  |

*(Reference documents: ST/SG/AC.10/C.3/2015/37)*

4.1.4.2, packing instruction IBC 520: Add the following new entries:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *UN No.* | *Organic peroxide* | *Type of IBC* | *Maximum quantity (litres)* | *Control temperature* | *Emergency Temperature* |
| 3109 | 2,5-Dimethyl-2,5-di(tert-butylperoxy)hexane,  not more than 52% in diluent type A | 31HA1 | 1000 |  |  |
| 3109 | 3,6,9-Triethyl-3,6,9-trimethyl-1,4,7-triperoxonane  not more than 27% in a diluent type A | 31HA1 | 1000 |  |  |
| 3119 | tert-Amyl peroxy-2-ethylhexanoate, not more than 62% in a diluent type A | 31HA1 | 1000 | +15 C | +20 C |

*(Reference document: ST/SG/AC.10/C.3/2015/37)*

Chapter 4.2

4.2.5.2.6, T23: In the first line after the title, add a new sentence to read as follows: "The formulations listed below may also be transported in packagings of OP8 (see packing instruction P520 of 4.1.4.1), with the same control and emergency temperatures, if applicable.".

*(Reference document: Informal document INF.50)*

Chapter 5.1

5.1.1 At the end, add the following Note:

***“NOTE****: In accordance with the GHS, a GHS pictogram not required by these Regulations should only appear in transport as part of a complete GHS label and not independently (see GHS 1.4.10.4.4).”.*

*(Reference document: ST/SG/AC.10/C.3/2015/54 as amended)*

Chapter 5.2

5.2.2.2.1.1.3 Amend to read as follows:

“5.2.2.2.1.1.3 If the size of the package so requires, the dimensions may be reduced proportionally, provided the symbols and other elements of the label remain clearly visible. Dimensions for cylinders shall comply with 5.2.2.2.1.2.”.

*(Reference document: ST/SG/AC.10/C.3/2015/30)*

5.2.2.2.2 Amend to read as follows:

“5.2.2.2.2 Specimen labels

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Label model No.** | **Division or Category** | **Symbol and symbol colour** | **Background** | **Figure in bottom corner (and figure colour)** | **Specimen labels** | **Note** |
| **Class 1: Explosive substances or articles** | | | | | | |
| 1 | Divisions 1.1, 1.2, 1.3 | Exploding bomb: black | Orange | 1  (black) | 1 | -**🞱🞱** Place for division – to be left blank if explosive is the subsidiary risk  -\* Place for compatibility group – to be left blank if explosive is the subsidiary risk |
| 1.4 | Division 1.4 | 1.4: black  Numerals shall be about 30 mm in height and be about 5 mm thick (for a label measuring 100 mm × 100 mm) | Orange | 1  (black) | 1-4 | **🞱** Place for compatibility group |
| 1.5 | Division 1.5 | 1.5: black  Numerals shall be about 30 mm in height and be about 5 mm thick (for a label measuring 100 mm × 100 mm) | Orange | 1  (black) | 1-5 | **🞱** Place for compatibility group |
| 1.6 | Division 1.6 | 1.6: black  Numerals shall be about 30 mm in height and be about 5 mm thick (for a label measuring 100 mm × 100 mm) | Orange | 1  (black) | 1-6 | **🞱** Place for compatibility group |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Label model No.** | **Division or Category** | **Symbol and symbol colour** | **Background** | **Figure in bottom corner (and figure colour)** | **Specimen labels** | | **Note** |
| **Class 2: Gases** | | | | | | | |
| 2.1 | Division 2.1:  Flammable gases (except as provided for in 5.2.2.2.1.6 d)) | Flame: black or white | Red | 2  (black or white) | rouge2_noir | rouge2 | - |
| 2.2 | Division 2.2:  Non-flammable, non-toxic gases | Gas cylinder: black or white | Green | 2  (black or white) | vert | vert_blanc | - |
| 2.3 | Division 2.3:  Toxic gases | Skull and crossbones: black | White | 2  (black) | skull_2 | | - |
| **Label model No.** | **Division or Category** | **Symbol and symbol colour** | **Background** | **Figure in bottom corner (and figure colour)** | **Specimen labels** | | **Note** |
| **Class 3: Flammable liquids**  **UN/SCETDG/47/INF.19** | | | | | | | |
| 3 | - | Flame: black or white | Red | 3  (black or white) | rouge3_noir | rouge3 | - |
| **Class 4** | | | | | | | |
| 4.1 | Division 4.1:  Flammable solids, self-reactive substances, solid desensitized explosives and polymerizing substances | Flame: black | White with 7 vertical red stripes | 4  (black) | stripes | | - |
| 4.2 | Division 4.2:  Substances liable to spontaneous combustion | Flame: black | Upper half white, lower half red | 4  (black) | blan-red | | - |
| 4.3 | Division 4.3:  Substances which, in contact with water emit flammable gases | Flame: black or white | Blue | 4  (black or white) | bleu4_noir | bleu4 | - |
| **Label model No.** | **Division or Category** | **Symbol and symbol colour** | **Background** | **Figure in bottom corner (and figure colour)** | **Specimen labels** | | **Note** |
| **Class 5** | | | | | | | |
| 5.1 | Division 5.1:  Oxidizing substances | Flame over circle: black | Yellow | 5.1  (black) | jaune5-1 | | - |
| 5.2 | Division 5.2:  Organic peroxides | Flame: black or white | Upper half red, lower half yellow | 5.2  (black) | 5-2red_noir | 5-2red | - |
| **Class 6** | | | | | | | |
| 6.1 | Division 6.1:  Toxic substances | Skull and crossbones: black | White | 6  (black) | skull6 | | - |
| 6.2 | Division 6.2:  Infectious substances | Three crescents superimposed on a circle: black | White | 6  (black) | 6 | | The lower half of the label may bear the inscriptions: “INFECTIOUS SUBSTANCE” and  “In the case of damage or leakage immediately notify Public Health Authority” in black colour |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Label model No.** | **Division or Category** | **Symbol and symbol colour** | **Background** | **Figure in bottom corner (and figure colour)** | **Specimen labels** | **Note** |
| **Class 7: Radioactive material** | | | | | | |
| 7A | Category I | Trefoil: black | White | 7  (black) | radioactive1 | Text (mandatory), black in lower half of label:  “RADIOACTIVE”  “CONTENTS ...”  “ACTIVITY ...”  One red vertical bar shall follow the word: “RADIOACTIVE” |
| 7B | Category II | Trefoil: black | Upper half yellow with white border, lower half white | 7  (black) | radioactive2 | Text (mandatory), black in lower half of label:  “RADIOACTIVE”  “CONTENTS ...”  “ACTIVITY ...”  In a black outlined box:  “TRANSPORT INDEX”;  Two red vertical bars shall follow the word: “RADIOACTIVE” |
| 7C | Category III | Trefoil: black | Upper half yellow with white border, lower half white | 7  (black) | radioactive3 | Text (mandatory), black in lower half of label:  “RADIOACTIVE”  “CONTENTS ...”  “ACTIVITY ...”  In a black outlined box:  “TRANSPORT INDEX”.  Three red vertical bars shall follow the word: “RADIOACTIVE” |
| 7E | Fissile material | - | White | 7  (black) | fissile | Text (mandatory): black in upper half of label: “FISSILE”;  In a black outlined box in the lower half of label: “CRITICALITY SAFETY INDEX” |

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Label model No.** | **Division or Category** | **Symbol and symbol colour** | **Background** | **Figure in bottom corner (and figure colour)** | **Specimen labels** | **Note** |
| **Class 8: Corrosive substances** | | | | | | |
| 8 | - | Liquids, spilling from two glass vessels and attacking a hand and a metal: black | Upper half white, lower half black with white border | 8  (white) | acide | - |
| **Class 9: Miscellaneous dangerous substances and articles, including environmentally hazardous substances** | | | | | | |
| 9 | - | 7 vertical stripes in upper half: black | White | 9 underlined  (black) | stripes_black | - |
| 9A | - | 7 vertical stripes in upper half:  black;  battery group, one broken and emitting flame in lower half:  black | White | 9 underlined  (black) | Losange-Batteries3 | - |

Chapter 5.4

[5.4.1.5.5 In the heading, after “Self-reactive substances”, insert *“, polymerizing substances*”. In the text, after the words “self-reactive substances”, insert “and polymerizing substances”.]

*(Reference document: ST/SG/AC.10/C.3/2015/38)*

Chapter 6.2

6.2.2.1.1 In the table, for “ISO 11118:1999”, in the column “Applicable for manufacture”, replace “Until further notice” by “Until 31 December 2020”.

6.2.2.1.1 In the table, after “ISO 11118:1999”, insert a new line to read as follows:

|  |  |  |
| --- | --- | --- |
| ISO 11118:2015 | Gas cylinders – Non-refillable metallic gas cylinders – Specification and test methods | Until further notice |

*(Reference document: ST/SG/AC.10/C.3/2015/39)*

6.2.2.1.1 In the table, for “ISO 11120:1999”, in the column “Applicable for manufacture”, replace “Until further notice” by “Until 31 December 2022”.

6.2.2.1.1 In the table, after “ISO 11120: 1999”, insert a new line to read as follows:

|  |  |  |
| --- | --- | --- |
| ISO 11120:2015 | Gas cylinders – Refillable seamless steel tubes of water capacity between 150 l and 3 000 l – Design, construction and testing | Until further notice |

*(Reference document: ST/SG/AC.10/C.3/2015/39)*

6.2.2.1 Insert a new paragraph 6.2.2.1.8 to read as follows.

“6.2.2.1.8 The following standard applies for the design, construction and initial inspection and test of UN pressure drums, except that inspection requirements related to the conformity assessment system and approval shall be in accordance with 6.2.2.5:

|  |  |  |
| --- | --- | --- |
| **Reference** | **Title** | **Applicable for Manufacture** |
| ISO 21172-1:2015 | Gas cylinders – Welded steel pressure drums up to 3 000 litres capacity for the transport of gases – Design and construction – Part 1: Capacities up to 1 000 litres | Until further notice |

*(Reference document: ST/SG/AC.10/C.3/2015/39)*

6.2.2.3 In the table, for “ISO 13340:2001”, in the column “Applicable for manufacture”, replace “Until further notice” by “Until 31 December 2020”.

*(Reference document: ST/SG/AC.10/C.3/2015/39)*

Annex III

Corrections to the 19th revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations

Chapter 3.3, special provision 310, last paragraph

Does not apply to the English version

*(Reference document: Informal document INF.7)*

[Chapter 3.3, special provision 369, first paragraph

*Replace* with radioactive material and corrosivity subsidiary risks *by* with radioactivity and corrosivity subsidiary risks]

*(Reference document: Informal document INF.8)*

[Chapter 3.3, special provision 384, at the end, before the Note

*Insert* However for placarding of cargo transport units, the placard shall correspond to Model No. 9.]

*(Reference document: Informal document INF.8)*

Appendices, Alphabetical index, *add*

|  |  |  |
| --- | --- | --- |
| POLYMERIZING SUBSTANCE, SOLID, STABILIZED, N.O.S. | 3531 | 4.1 |
| POLYMERIZING SUBSTANCE, LIQUID, STABILIZED, N.O.S. | 3532 | 4.1 |
| POLYMERIZING SUBSTANCE, SOLID, TEMPERATURE CONTROLLED, N.O.S. | 3533 | 4.1 |
| POLYMERIZING SUBSTANCE, LIQUID, TEMPERATURE CONTROLLED, N.O.S. | 3534 | 4.1 |

*(Reference document: Informal document INF.8)*

Chapter 4.1, packing instruction 200, Table 2, UN No. 1058, column for Special packing provisions

*Insert* z

*(Reference document: Informal document INF.56)*

[Chapter 5.2, 5.2.2.2.1.3, second sentence

*Replace by* However for label model No. 9A, the upper half of the label shall only contain the seven vertical stripes of the symbol and the lower half shall contain the group of batteries of the symbol and the class number. Except for label model No. 9A, the label may include such text as the UN number, or words describing the hazard class (e.g. “flammable”) in accordance with 5.2.2.2.1.5 provided that the text does not obscure or detract from the other required label elements.]

*(Reference document: Informal document INF.8)*