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

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

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

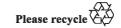
held in Geneva from 23 June to 2 July 2014

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#### Annexes

- I. Draft amendments to the eighteenth revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations<sup>1</sup>
- II. Corrections to the eighteenth revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations<sup>1</sup>
- III. Draft amendments to the fifth revised edition of the Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria<sup>1</sup>

For practical reasons, this annex has been published as an addendum with the symbol ST/SG/AC.10/C.3/90/Add.1.

## I. Attendance

- 1. The Sub-Committee of Experts on the Transport of Dangerous Goods held its forty-fifth session from 23 June to 2 July 2014.
- 2. Experts from the following countries took part in the session: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Finland, France, Germany, Italy, Japan, Netherlands, Norway, Republic of Korea, Russian Federation, South Africa, Spain, Sweden, Switzerland, United Kingdom and United States of America.
- 3. Under rule 72 of the rules of procedure of the Economic and Social Council, observers from Ireland, Luxembourg, New Zealand, Romania and Slovakia also took part.
- 4. Representatives of the European Union and the Intergovernmental Organization for International Carriage by Rail (OTIF) also attended.
- 5. Representatives of the International Atomic Energy Agency (IAEA), the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) were also present.
- Representatives of the following non-governmental organizations took part in the discussion on items of concern to those organizations: Association of Hazmat Shippers (AHS); Australian Explosives Industry Safety Group (AEISG); Compressed Gas Association (CGA); Cosmetics Europe; Council on Safe Transportation of Hazardous Articles (COSTHA); Dangerous Goods Advisory Council (DGAC); Dangerous Goods Trainers Association (DGTA); European Association for Advanced Rechargeable Batteries (RECHARGE); European Association of Automotive Suppliers (CLEPA); European Chemical Industry Council (CEFIC); European Cylinder Makers Association (ECMA); European Industrial Gases Association (EIGA); European Liquefied Petroleum Gas Association (AEGPL); European Metal Packaging (EMPAC); Federation of European Aerosol Associations (FEA); Fertilizers Europe (FE); Institute of Makers of Explosives (IME); International Air Transport Association (IATA); International Association for Soaps, Detergents and Maintenance Products (AISE); International Bulk Terminals Association (IBTA); International Confederation of Container Reconditioners (ICCR); International Confederation of Drums Manufacturers (ICDM); International Confederation of Intermediate Bulk Container Associations (ICIBCA); International Confederation of Plastics Packaging Manufacturers (ICPP); International Council of Chemical Associations (ICCA); International Federation of Airline Pilots' Associations (IFALPA); International Fibre Drum Institute (IFDI); International Organization for Standardization (ISO); International Paint and Printing Ink Council (IPPIC); International Petroleum Industry Environmental Conservation Association (IPIECA); International Tank Container Organisation (ITCO); KiloFarad International (KFI); Portable Rechargeable Battery Association (PRBA); Responsible Packaging Management Association of Southern Africa (RPMASA); Sporting Arms and Ammunition Manufacturers' Institute (SAAMI); Stainless Steel Container Association (SSCA); and the World Nuclear Transport Institute (WNTI).

## II. Adoption of the agenda (agenda item 1)

Documents: ST/SG/AC.10/C.3/89 (Provisional agenda)

ST/SG/AC.10/C.3/89/Add.1 (List of documents)

Informal documents: INF.1, INF.2 (List of documents)

INF.12 (Provisional timetable) INF.30 (Reception by NGOs)

7. The Sub-Committee adopted the provisional agenda prepared by the secretariat after amending it to take account of informal documents (INF.1 to INF.66).

## III. Explosives and related matters (agenda item 2)

8. Following a preliminary examination in the plenary, questions relating to agenda item 2 were referred to the Working Group on Explosives, which met from 23 to 26 June 2014 under the chairmanship of Mr. Ed de Jong (Netherlands), except for two issues under agenda sub-item 2 (e) which were discussed in plenary session only (see paras 34-39 below).

## **Report of the Working Group**

Informal documents: INF.61 and Adds 1-5

9. The Sub-Committee approved the report of the Working Group as drafted in INF.61, and adopted the proposed amendments in Adds 1-5 except as indicated in the conclusions summarized below. The adopted texts will be included in the consolidated list of draft amendments adopted at the forty-third, forty-fourth and forty-fifth sessions for confirmation by the Sub-Committee at the next session. Since some of these texts were adopted on the basis of informal documents which were available in English only, the adopted texts are not included in the annexes to this report.

#### A. Tests and criteria for flash compositions

#### 1. Classification of fireworks

Document: ST/SG/AC.10/C.3/2014/59 (Netherlands)

Informal documents: INF.5 (Netherlands)

INF.18 (United Kingdom)

- 10. The Sub-Committee noted that:
  - (a) The Netherlands will continue the work, taking into account the comments of the Working Group, to develop the proposal further for the December 2014 session;
  - (b) The United Kingdom will carry on the research on the mechanisms that may be causing the anomalous waterfall effect that was reported in 2014/59 and that does not agree with 6(c) results on packages of waterfalls and will develop a scope of project to see if other experts might be interested in participating.

### 2. Flash composition tests

Informal documents: INF.19 (Japan)

INF.20 (United Kingdom)

- 11. The expert from Japan will take the comments of the Working Group on INF.19 and prepare a formal proposal.
- 12. In relation to INF.20, upon completion of the testing in the United States of America and Japan, a formal proposal to modify Figures A7-1 to A7-8 may be forthcoming.

#### B. Review of test series 6

1. Correction to Figure 10.3: Procedure for assignment to a Division of Class 1 (Manual of Tests and Criteria) and Figure 2.1.3 (GHS)

Documents: ST/SG/AC.10/C.3/2014/1 (IME, SAAMI)

ST/SG/AC.10/C.3/2014/11 (IME, SAAMI)

- 13. The proposal to insert a new box 32a between boxes 32 and 33 in Figure 10.3 and Figure 10.8 of the Manual was adopted.
- 14. Under the assumption that the GHS does not recognize or use the Special Provisions contained in Chapter 3.3 of the Model Regulations, the Sub-Committee agreed the best solution would be to list the eight numbers in the corresponding box of Figure 2.1.3 of the GHS<sup>2</sup>.

#### 2. Recommendations for improvement of the tests series 6

*Documents*: ST/SG/AC.10/C.3/2014/4 (IME)

ST/SG/AC.10/C.3/2014/42 (Germany) ST/SG/AC.10/C.3/2014/53 (USA)

Informal documents: INF.36 (Germany)

INF.51 (Germany)

- 15. The Sub-Committee adopted amendments to section 16 as proposed in annex 2 of ST/SG/AC.10/C.3/2014/4 with some modifications, as well as consequential amendments to 10.4.3.4. The Sub-Committee also endorsed the proposals contained in paragraph 21 of that document.
- 16. Rather than introducing a new 6 (e) test on small arms ammunition as proposed in ST/SG/AC.10/C.3/2014/42, the Sub-Committee accepted a new test in a new Appendix 9 to the Manual, as well as consequential amendments, as recommended by the Working Group.
- 17. The Sub-Committee noted the view of the Working Group that the additional method of building a fire described by the expert of the United States of America in ST/SG/AC.10/C.3/2014/53 would be acceptable for use in performing the 6 (c) test.
- 18. The Sub-Committee agreed that the work done by Germany in examining witness screen construction, projection hazard evaluation by dent depth measurement, and the potential effects of heating on witness screen performance should continue as part of continuing review of test series 6 and specifically the 6 (c) test (informal documents INF.38 and INF.51).

Note by the secretariat: After the session, the GHS Sub-Committee considered this issue and did not share this view, see ST/SG/AC.10/C.4/54, paras 11-13.

### C. Review of tests in parts I and II of the Manual of Tests and Criteria

## 1. Recommendations for improvement of Series 1 (a) and 2 (a) Gap Tests and Series 1 (c) and 2 (c) Time/Pressure Tests

*Document*: ST/SG/AC.10/C.3/2014/6 (IME)

Informal document: INF.4 (Chairman of the Working Group on Explosives)

19. The Sub-Committee adopted the proposed amendments to 11.4.1.2.1, 11.6.1.2.2, 12.4.1.2 and 12.6.1.2.2 as proposed by the Working Group.

#### 2. Review of Test Series 8

*Document*: ST/SG/AC.10/C.3/2014/11 (AEISG)

20. The Sub-Committee adopted the amendments to Section 18 of the Manual and a consequential amendment as proposed by the Working Group.

#### 3. Review of tests in parts I and II of the Manual of Tests and Criteria

Informal document: INF.4 (Chairman of the Working Group on Explosives)

21. The Sub-Committee adopted the amendments proposed by the Working Group.

## D. Review of packing instructions for explosives

Document: ST/SG/AC.10/C.3/2014/20 (SAAMI)

- 22. The Sub-Committee adopted the amendments to 4.1.4 of the Model Regulations.
- 23. The expert from France said that the changes to packing provision 48 in section 4.1.4 should be extended to cover other metal parts that may be contained in non-metallic packagings as mentioned in 6.1.4. He was invited to submit a proposal to the next session.

## E. Miscellaneous

#### 1. Classification of ammunition, smoke, containing titanium tetrachloride

Document: ST/SG/AC.10/C.3/2014/3 (Austria)

24. Some experts did not agree with the advice of the Working Group that no Division 6.1 subsidiary risk label should be required because there was little opportunity for exposure to titanium tetrachloride. The proposal by Austria in document ST/SG/AC.10/C.3/2014/3 to require such a label was put to the vote and adopted with the replacement of the word "toxic" by "toxic by inhalation" in special provision 204.

#### 2. Classification of articles under UN No. 0349

Document: ST/SG/AC.10/C.3/2014/22 (Italy)

25. The Sub-Committee noted that the Working Group did not support the proposal by Italy, but did encourage Italy to continue to study the problem and the observations of the Working Group and develop a more comprehensive proposal for future consideration.

#### 3. Treatment of examples in 1.1.2 of the Manual of Tests and Criteria

Document: ST/SG/AC.10/C.3/2014/37 (SAAMI)

26. The Sub-Committee adopted the text proposed by the Working Group.

#### 4. New entry for "Rocket motors" 1.4 C

*Document*: ST/SG/AC.10/C.3/2014/39 (Canada)

27. The Sub-Committee adopted the new entry for model rocket motors in Division and Compatibility Group 1.4 C.

#### 5. Test Series 3

Documents: ST/SG/AC.10/C.3/2014/48 (United States of America)

ST/SG/AC.10/C.3/2014/51 (United States of America) ST/SG/AC.10/C.3/2014/52 (United States of America)

28. The Sub-Committee adopted the ABL, MBOM and SBAT tests proposed by the Working Group as well as consequential amendments.

## 6. Proposal to clarify what is meant by "as presented for transport" in special provision 280

Document: ST/SG/AC.10/C.3/2014/55 (COSTHA)

- 29. While understanding the desire of COSTHA to avoid performing tests when not necessary, several experts emphasized in plenary session that simple changes in the way in which a product was packaged could have significant consequences for the results of the tests. Rather than providing a strict definition of the phrase, they considered that the competent authority should be allowed some scope for interpretation.
- 30. It was agreed to ask the Working Group on Explosives to look into whether, in the particular case in question, the phrase could be replaced by relevant provisions on the parameters to be observed. The Working Group finally developed a note to be added to special provision 280.
- 31. Several experts considered that the proposed note would cause problems of interpretation and did not provide sufficient guidance as to when similar packagings of the same article did not need to be retested. Therefore the note was not adopted.

## 7. Proposal concerning the format of approvals issued by Competent Authorities for Class 1 Dangerous Goods

Informal document: INF.10 (United Kingdom)

- 32. The Sub-Committee agreed to include a new 2.1.3.7 in the Model Regulations as proposed by the Working Group.
- 8. Implementation of a new chapter 2.17 "Desensitized Explosives" in the GHS and implementation of "Classification procedures, test methods and criteria relating to the class of desensitized explosives" in a new Part V of the Manual of Tests and Criteria

Document: ST/SG/AC.10/C.3/2014/2 (Germany)

33. The Sub-Committee noted that the Working Group had finalized a proposed new GHS chapter for desensitized explosives and corresponding tests and criteria for inclusion in the Manual of Tests and Criteria, and endorsed the outcome of this work<sup>3</sup>.

#### 9. Use of the Manual of Tests and Criteria in the context of the GHS

Document: ST/SG/AC.10/C.3/2014/61 (Secretariat)

Informal documents: INF.8 and Adds. 1–5 (Secretariat)

INF.35 (IME)

34. The Sub-Committee agreed with the secretariat that the Manual of Tests and Criteria should be re-edited to take into account its use in the overall context of the GHS, and no longer solely in the context of the transport of dangerous goods. It welcomed the secretariat's initiative and the preparation of a first draft, for discussion.

- 35. It was, however, noted that editorial changes could have unintended consequences for the interpretation of the texts. The proposed changes should therefore be checked carefully. That would apparently not be possible during the time available in the present biennium.
- 36. Delegations were therefore requested to identify points requiring more in-depth examination and to send their comments to the secretariat so that they could be discussed during the next biennium.
- 37. The Sub-Committee agreed that a sixth revised edition of the Manual should be published in 2015, taking into consideration amendments 1 and 2, that had already been published, and the amendments that would be adopted by the Committee at its December 2014 session. A seventh revised edition could be published in 2017, with the editorial changes deemed necessary to facilitate the use of the Manual in the context of the GHS.

#### 10. Harmonized international standard for explosives traceability markings

*Document:* ST/SG/AC.10/C.3/2014/5 (IME)

Informal document: INF.28 (IME)

- 38. Several experts supported the proposal to introduce non-binding provisions to facilitate the traceability of commercial explosives through a marking, as they considered that it would help to improve security. However, several questions of principle were raised. While transport regulation might seem a good means of encouraging the implementation of such a marking system, that system was not limited directly to security during transport. Several markings were already prescribed in national or regional regulations and could not be easily modified.
- 39. The representative of IME said that he would prepare a new, improved document for the next session and invited experts to discuss the issue with the respective authorities concerned.

Note by the secretariat: For the outcome of the discussion by the GHS Sub-Committee, refer to ST/SG/AC.10/C.4/54, paras 18-19.

## IV. Global harmonization of transport of dangerous goods regulations with the Model Regulations (agenda item 3)

## A. Assignment of flammable liquids of packing group II to packing group III according to their viscosity

*Document:* ST/SG/AC.10/C.3/2014/38 (IPPIC)

Informal document: INF.63 (IPPIC)

40. The proposed amendment to 2.3.2.2 was adopted (see annex I).

### B. Packagings for water-reactive materials

Document: ST/SG/AC.10/C.3/2014/41 (Germany)

- 41. Opinions were divided on the proposal. Some delegations saw advantages in the proposal insofar as it would shed light on cases in which specific requirements for a mode of transport were justified and would help participants in a transport chain to identify divergences between modal regulations. Others feared setting a precedent by identifying detailed provisions specific to a mode of transport that had been adopted in another forum. Such identification could not be done in a comprehensive manner. Participants had to refer to all the applicable regulations.
- 42. The expert from Germany withdrew her proposal, stressing the need for modal institutions to observe the principle of harmonization and to diverge only when there were good grounds for doing so.

#### C. Amendment 37-14 to the IMDG Code

Informal document: INF.42 (IMO)

43. The Sub-Committee noted with satisfaction that the IMO Maritime Safety Committee had adopted amendment 37-14 to the IMDG Code, which would enter into force on 1 January 2016, with a voluntary application date of 1 January 2015 (resolution MSC.372(93), in annex 8 of document MSC93/22/Add.2, available at http://docs.imo.org).

## V. Listing, classification and packing (agenda item 4)

#### A. Polymerizing substances

Document: ST/SG/AC.10/C.3/2014/31 (DGAC)

Informal document: INF.31 (Germany)

44. In general terms the Sub-Committee was in favour of introducing provisions in the current biennium to resolve the problems related to polymerizing substances. However, opinions differed on whether such substances should be placed in Division 4.1 (owing to the release of heat in the event of polymerization and the associated fire hazard) or in Class 9, as some experts considered that such substances would not be covered by the definition of self-reactive substances.

45. The expert from Germany and DGAC would submit a new proposal at the next session, with a classification in Class 9. Delegations that considered that the classification should be in Division 4.1 were invited to send relevant proposals.

## B. Classification inconsistencies (application of criteria versus dangerous goods list)

#### 1. Classification of ammonia solutions

Document: ST/SG/AC.10/C.3/2014/40 (Fertilizers Europe)

- 46. Some experts supported the proposal to classify ammonia solutions under UN No. 2073 in Division 2.3, with a subsidiary risk of Class 8. Others considered that to amend the current classification it would be necessary to provide appropriate data establishing toxicity and corrosivity levels. The consequences had to be considered for the conditions of transport, for example in IBCs or in tanks, and also for current industrial practices. At the same time, the case of fertilizer solutions under UN No. 1043 should be studied.
- 47. The representative of Fertilizers Europe said that he would submit a new proposal with the requested justifications.

## 2. Guiding Principles for addressing inconsistencies

Document: ST/SG/AC.10/C.3/2014/23 (CEFIC)

Informal document: INF.58 (Belgium)

- 48. The CEFIC proposals were referred to a coffee-break working group whose proposals were laid out in informal document INF.58.
- 49. The Sub-Committee considered that the proposals required close examination, and the expert from Belgium was asked to submit them officially at the next session.

#### C. Miscellaneous

#### 1. Packaging provisions (large packagings) for aerosols

Document: ST/SG/AC.10/C.3/2014/7 (United Kingdom)

Informal document: INF.33 (FEA)

- 50. The Sub-Committee accepted the proposal of the United Kingdom to use large packagings without inner packagings for waste aerosols, as amended by FEA in informal document INF.33, and that such large packagings correspond to the packing group II performance level instead of that of packing group III.
- 51. As a transitional measure, large packagings of packing group III could continue to be used until 2022, in accordance with the current regulations (see annex I).

#### 2. Editorial correction to packing instruction P906

Document: ST/SG/AC.10/C.3/2014/13 (Germany)

52. The proposed correction was adopted (see annex II).

#### 3. Neutron radiation detectors

Document: ST/SG/AC.10/C.3/2014/21 (DGAC)

- 53. The Sub-Committee decided to amend the text to provide for absorption and adsorption.
- 54. The further DGAC proposal to exempt neutron radiation detection systems containing not more than 1g of boron trifluoride from the requirement to contain absorbant or adsorbant material was put to the vote and was not adopted.

#### 4. Celluloid table tennis balls

Document: ST/SG/AC.10/C.3/2014/33 (DGAC)

- 55. Several experts did not agree that table tennis balls should be exempted, as they were flammable. Others considered that they did not quite correspond with the description of UN No. 2000, CELLULOID, and should be transported under UN No. 1325 instead. Others felt that in certain packagings they could be exempted.
- 56. The DGAC representative withdrew the proposal and said that he would submit a new one in the light of the discussions so as to clarify the situation for consignors.

#### 5. UN No. 3170 Aluminium smelting by-products or aluminium remelting by-products

Document: ST/SG/AC.10/C.3/2014/10 (Norway and Spain)

Informal document: INF.54 (Norway and Spain)

- 57. The Sub-Committee adopted the proposal contained in informal document INF.54, which authorized the use of sheeted bulk containers for the inland transport of such byproducts and required inter alia appropriate ventilation and protection against ingress of water for all transport units in the event of bulk carriage (see annex I).
- 58. It was noted that ADR, RID and ADN required marking also on the doors of the transport units and that it was for each modal organization to set out the specific conditions for a given transport mode.

#### 6. Subsidiary risks for uranium hexafluoride

Document: ST/SG/AC.10/C.3/2014/60 (Austria)

Informal documents: INF.15 and INF.15/Refs. 1-15 (WNTI)

- 59. Some experts would have liked to have more time to consider the data submitted by WNTI and possibly to obtain more recent data to conclude that  $UF_6$  was toxic. However, it was recalled that the question had been under consideration for several years, that all the data indicated that  $UF_6$  was toxic owing to the formation of hydrogen fluoride and that it was unlikely that new information would be produced.
- 60. The Sub-Committee thus agreed that a decision had to be taken, and the Austrian proposal was adopted by consensus. In accordance with the principles behind special provisions 172 and 290, a Division 6.1 subsidiary risk was thus assigned to UN Nos. 2977 and 2978, in addition to the primary risk of radioactivity and the subsidiary risk of corrosivity, and the subsidiary risk should be indicated by a label. Uranium hexafluoride in excepted packages of less than 0.1 kg per package was assigned to Division 6.1 with subsidiary risks of corrosivity and radioactivity (see annex I).
- 61. The operational complications that could result from the decision should be handled by the competent modal organizations.

#### 7. Classification and hazard communication provisions for crude oil

Document: ST/SG/AC.10/C.3/2014/49 (Canada and United States)

Informal documents: INF.17 and INF.26 (IPIECA)

- 62. The expert from Canada said that, following a series of accidents involving the rail transport of crude oil in tank cars in North America, she and the expert from the United States had carefully considered the safety implications of such transport and the possible environmental impact of the significant and exponential increase in the inland transport of crude oil. Specifically, they asked the Sub-Committee to consider whether the entries for crude oil were adequate in the light of the significant variations in its composition, in particular the flammable gas content, and whether factors other than the flashpoint or the boiling point should be taken into account for classification, such as the vapour pressure. They also proposed examining the relevance of other classification provisions, such as sampling quality management procedures and systems and classification tests for the substances to be transported.
- 63. The representative of IPIECA said that the studies done on crude oil under discussion did not indicate any apparent problems with the classification criteria currently in use. If the Sub-Committee wanted to change them it should also take into consideration similar substances with complex compositions and should work with the GHS Sub-Committee. The American Petroleum Institute (API) is working on a new standard for crude oil classification. He would provide a version of the draft to the Sub-Committee.
- 64. The expert from China said that his country had become a major importer of crude oil and that difficulties had been encountered with rail transport there too. He endorsed the idea that work should be done on that issue.
- 65. On the whole, the Sub-Committee was in favour of exchanging experience on the subject and possibly of carrying out work on crude oil classification and testing methods, but several experts considered that the data provided was for the time being insufficient to immediately justify work.
- 66. In conclusion, the experts from Canada and the United States were invited, along with IPIECA and other interested delegations to report back on the results of their studies on classification and to present more specific proposals on the paths that the Sub-Committee might consider at its December 2014 session, when defining its programme of work for 2015–2016.

#### 8. Special packing provision PP83

Document: ST/SG/AC.10/C.3/2014/43 (United Kingdom)

67. The proposal to delete PP83 against the entries for UN No. 2813 and to delete the provision under instructions P403 and P410 was adopted (see annex I).

#### 9. Provisions for insulation of packages containing dry ice

Document: ST/SG/AC.10/C.3/2014/50 (Canada and United States of America)

68. The Sub-Committee noted with interest the research published by the Transportation Research Board of the United States of America on the properties of dry ice and packages containing dry ice and the correlation between package insulation and sublimation rates. The report might be used during the forthcoming biennium to finalize the provisions concerning packaging and delegations interested in the work were invited to send their comments to the expert from the United States. It was however noted that packagings were often specifically intended to allow the sublimation of dry ice during transport.

#### 10. Packing requirements for perchloric acid (UN No. 1873)

Document: ST/SG/AC.10/C.3/2014/57 (COSTHA)

*Informal document:* INF.6 (COSTHA)

69. Some experts remained opposed to the unconditional use of plastics inner packagings or receptacles. However, the proposal to amend PP28 was put to a vote and adopted (see annex I).

#### 11. Polyester resin kits containing Division 4.1 substances

*Document*: ST/SG/AC.10/C.3/2014/32 (DGAC)

Informal document: INF.59 (DGAC)

70. The Sub-Committee adopted the proposal to add a new entry for polyester resin kits, as well as the related amendments, as presented in informal document INF.59 (see annex I).

#### 12 Classification under UN Nos. 2211 and 3314

Informal document: INF.13 (CEFIC)

- 71. Several experts provided technical comments on the proposal to develop criteria for classification in Class 9 of polymeric beads evolving flammable vapours. The representative of CEFIC will prepare a revised proposal to take them into account.
- 72. The Sub-Committee noted that this proposal was intended to clarify the classification of UN Nos. 2211 and 3314 in the context of transport only, but considered that it could be of interest to the GHS Sub-Committee as well, and it was agreed to transmit INF.13 to the GHS Sub-Committee for information.

## VI. Electric storage systems (agenda item 5)

### A. Testing of lithium batteries

Informal working group on testing large lithium batteries

## Report on the second meeting of the informal working group

Document: ST/SG/AC.10/C.3/2014/45 (France, PRBA,

RECHARGE and COSTHA)

- 73. The Sub-Committee adopted the proposed amendments to 38.3.2.1, 38.3.3 (d), (f) and (g) and 38.3.4.7.1, deleting the square brackets and with some editorial corrections (see annex III).
- 74. The amendments to the definitions in 38.3.2.3 were adopted provisionally (text placed in square brackets), with some editorial changes (see annex III). The informal working group would need to review them in light of its future discussions.
- 75. The proposed amendments to 38.3.4.5.2 gave rise to numerous comments. After lengthy discussion, given the highly technical nature of the issues, the delegations who had commented and asked questions were asked to submit them in writing to the Chairman of the working group so that the working group could provide the necessary explanations and perhaps submit an improved text.

#### 2. Third meeting of the informal working group

Informal document: INF.49 (France, PRBA, RECHARGE and COSTHA)

76. The Sub-Committee noted that the next session of the informal working group would be held in Washington D.C. from 29 September to 2 October 2014. As the meeting was to be held after the deadline for submission of official documents, any proposed amendments should be submitted in English and in French.

#### B. Safety procedures for damaged or defective lithium batteries

77. As no document had been submitted under this sub-item, it was not discussed.

## C. Large batteries

78. As no document had been submitted under this sub-item, it was not discussed, except for questions relating to testing of large batteries under sub-item (a) (see paras 73-76).

#### D. Thermal batteries

Informal document: INF.11 (Germany)

79. The expert from Germany was invited to submit her proposal in an official document for the next session, taking account of the comments from various delegations. Delegations were asked to send their comments to the expert in writing.

#### E. Miscellaneous

## 1. Air transport of lithium batteries

Informal document: INF.56 (ICAO)

80. The Sub-Committee noted that ICAO had decided to prohibit the transport of lithium metal batteries as cargo on passenger aircraft, other than in exceptional circumstances and subject to conditions yet to be set out.

## 2. Transport of lithium batteries of small production runs, of prototype lithium batteries, or of prototype lithium batteries in equipment

Documents: ST/SG/AC.10/C.3/214/12 (Germany)

ST/SG/AC.10/C.3/2014/47 (France)

Informal documents; INF.16 (Sweden)

INF.22 (PRBA and RECHARGE) INF.39 and -/Corr.1 (France)

INF.62 and INF.62/Rev.1 (Proposals by the lunchtime

working group)

- 81. The Sub-Committee adopted the amended special provision 310 as drafted in informal document INF.62/Rev.1 with some editorial corrections (see annex I).
- 82. The expert from the United Kingdom said that he would have preferred the development of a packing instruction and that he might submit a proposal at the next session.

83. The expert from Switzerland said that an indication in the transport document would have been useful to facilitate the implementation of these provisions. He was invited to submit an official proposal if he wished such a requirement.

#### 3. Hazard communication for lithium batteries and other Class 9 entries

Document: ST/SG/AC.10/C.3/214/18 (United Kingdom)

Informal documents; INF.22 (PRBA and RECHARGE)

INF.66 (Conclusions of the lunchtime working

group)

84. The document prepared by the expert from the United Kingdom following discussions at the last session entailed long discussions on how to specifically identify the hazard presented by lithium batteries but also those of other Class 9 substances or articles since the Class 9 label in itself does not convey specific information. Another question was whether this could be possible without multiplication of different types of labels or development of divisions in Class 9. These questions were referred to a lunchtime working group, whose conclusions (INF.66) will serve as a basis for a new proposal by the United Kingdom.

## VII. Transport of gases (agenda item 6)

#### A. Global recognition of UN and non-UN pressure receptacles

Informal document: INF.41 (CGA)

85. A group met informally during breaks to discuss this informal document. A lunch time working group session should take place during the next session of the Sub-Committee on Monday 1 December 2014.

#### B. Miscellaneous

#### 1. Packing instructions P200 and P206 for collective entries

Document: ST/SG/AC.10/C.3/2014/14 (Germany)

Informal document: INF.44 (EIGA)

86. The proposed amendments to packing instructions P200 and P206 were adopted with some editorial corrections and the insertion of a note on the consideration of the compressibility factor of the compressed gas (see annex I).

## 2. Material requirements regarding elongation for non-refillable cylinders

Document: ST/SG/AC.10/C.3/2014/15 (Germany)

Informal documents: INF.25 (ECMA)

INF.53 (Portugal)

- 87. In the light of the informal documents submitted, the expert from Germany withdrew his proposal.
- 88. The experts from Belgium and Germany considered that it would be advisable to clarify how standards referenced in the Model Regulations were to be used given their scope. They were invited to submit a document if they wished to further the discussion.

### 3. Salvage pressure receptacles

Document: ST/SG/AC.10/C.3/2014/16 (Germany)

89. The proposal was adopted with some changes to the text proposed for 4.1.1.18.2 (see annex I).

#### 4. Insertion of new ISO standards for filling in P200

*Document*: ST/SG/AC.10/C.3/2014/27 (ISO)

Informal document: INF.47 (CGA)

90. The proposal to insert the standards was adopted with some changes (see annex I).

#### 5. Insertion of new and replacement ISO standards in 6.2.2

*Document*: ST/SG/AC.10/C.3/2014/28 (ISO)

Informal document: INF.46 (CGA)

- 91. Proposal 1, to add a reference to ISO standard 11515:2013, was provisionally adopted, subject to verification before the next session. Proposal 2, to add a reference to ISO standard 10462:2013, was adopted (see annex I).
- 92. In respect of proposal 3, some experts were of the opinion, like CGA, that a first periodic inspection of acetylene cylinders at three years was too early to detect a significant deterioration of new porous material. Since neither ISO nor CGA had included data in their proposals on the deterioration of the cylinders with time, ISO was asked to submit a new proposal with justification at the next session, and the delegations who did not agree were also asked to explain their arguments. The expert from South Africa emphasized the importance of producing a harmonized global solution.

#### 6. Hydraulic pressure testing of pressure receptacles

Document: ST/SG/AC.10/C.3/2014/29 (ECMA and EIGA)

93. The proposed amendments to 6.2.1.5.1 (g) were adopted (see annex I).

## 7. Use of liquid nitrogen as insulating agent for tanks transporting hydrogen, refrigerated liquid (UN 1966) or helium, refrigerated liquid (UN 1963)

*Document*: ST/SG/AC.10/C.3/2014/36 (EIGA)

94. EIGA will submit a revised proposal at the next session to take account of comments made, in particular with regard to indicating the presence of nitrogen venting.

## VIII. Miscellaneous proposals for amendments to the Model Regulations on the Transport of Dangerous Goods (agenda item 7)

#### A. Fuels in machinery or equipment

Document: ST/SG/AC.10/C.3/2014/17 (Belgium, DGAC)

95. After discussion in plenary, this document was considered by a lunchtime working group. The expert from Belgium and DGAC will submit a new proposal on the basis of the outcome of the working group deliberation as well as of the discussion on dangerous goods in articles (see paragraph 96).

## B. Articles containing small quantities of dangerous goods

#### 1. Articles containing small quantities of dangerous goods

Document: ST/SG/AC.10/C.3/2014/44 (United Kingdom)

Informal document: INF.23 (PRBA and RECHARGE)

96. After consideration of the draft proposals presented by the expert from the United Kingdom for addressing articles containing small quantities of dangerous goods within the Model Regulations, the Sub-Committee requested a lunchtime working group to define directions for further work. The expert from the United Kingdom was invited to prepare a new proposal on the basis of the conclusions of the working group which were summarized by the vice-chairman, and to circulate it for comments at the drafting stage before submitting it officially for the next session.

#### 2. Proposal for correction to 1.1.1.9

Document: ST/SG/AC.10/C.3/2014/46 (Russian Federation)

97. Consideration of this document was postponed to the next session.

#### C. Used medical devices

Document: ST/SG/AC.10/C.3/2014/56 (COSTHA)

Informal document: INF.57 (COSTHA)

98. Due to lack of support for his proposal, the representative of COSTHA withdrew it and said that he might submit a new one to take account of the comments made.

#### D. Environmentally hazardous substances

## Classification of small quantities of environmentally hazardous substances that are also viscous flammable liquids

Informal document: INF.24 (IPPIC)

99. The representative of IPPIC was invited to submit an official proposal to take account of the comments made.

#### E. Terminology

### Proper shipping names

Informal document: INF.27 (Italy)

100. The expert from Italy said he would submit an official proposal for the next session.

### F. Marking and labelling

#### 1. Correction to the French version of 5.3.1.2.1

Informal document: INF.60 (Secretariat)

101. The correction to the French version of 5.3.1.2.1 proposed by the secretariat was adopted (see annex II).

#### 2. Use of the terms "mark" and "marking" in the Model Regulations

Document: ST/SG/AC.10/C.3/2014/9 (United Kingdom)

Informal documents: INF.9 (Secretariat)

INF.37 (Romania)

102. After discussion which showed that opinions were divided on the merits of introducing definitions of the terms "mark", "label" and "placard", but also support in general for the rationalization of the use of these terms, the expert from the United Kingdom invited delegations to send their comments in writing before the end of July 2014 so that she could prepare one or two new proposals for the next session as appropriate. The observer from Romania emphasized the importance of clarification of the current terminology on marking and labelling.

#### 3. Marking of portable tanks

*Document:* ST/SG/AC.10/C.3/2014/24 (CEFIC)

103. The Sub-Committee adopted the first proposal concerning the possibility of using labels rather than placards for portable tanks of not more than 3000 litres, provided that they are affixed on two opposite sides. However, some experts were reluctant to allow the marking of the UN number in characters not less than 12 mm high (instead of 65 mm) and it was noted that the reduced size of marking should be considered only when there is insufficient area to use markings of the required normal size.

104. In view of the comments, the representative of CEFIC said he would submit a new proposal at the next session covering all issues addressed.

#### 4. Marking of inner receptacles of composite IBCs

*Document*: ST/SG/AC.10/C.3/2014/26 (ICPP)

105. The proposals of amendments to 6.5.2.2.4 were adopted (see annex I) except the proposal for addition of a NOTE 3 which was withdrawn.

## 5. Marking of small cylinders

Document: ST/SG/AC.10/C.3/2014/35 (EIGA and AEGPL)

Informal document: INF.45 (CGA)

106. Although there was general support for the proposal, many comments were made on the details especially as regards visibility and secure fixing of the labels, and the representative of EIGA said he would prepare a new proposal for the next session.

### 6. Marking requirements in Chapter 3.3 special provisions

Document: ST/SG/AC.10/C.3/2014/58 (United Kingdom)

107. The proposals by the expert from the United Kingdom were adopted, except that it was decided to require a minimum size of 12 mm (see annex I).

## 7. Marking of the overpack with the word "OVERPACK"

Informal document: INF.43 (Spain)

108. Most experts considered that it is not necessary to mark the word "OVERPACK" on an overpack when all marks such as the UN number and the proper shipping name and the labels on the packages contained are visible outside the overpack. However there was no

consensus on this interpretation and the expert from Spain said that she would submit a document at the next session to clarify the meaning of 5.1.2.1.

#### 8. Description of labels and marks

Informal document: INF.38 (IPPIC and CEFIC)

- 109. Some experts expressed support for taking account of the design of the packaging when allowing labels or marks of reduced size, while others felt that the fact that labels and marks will have to be displayed is known at the design stage.
- 110. The representative of IPPIC said that IPPIC and CEFIC will submit an official proposal at the next session taking account of the comments made.

## G. Packagings

#### 1. Leakproofness testing procedures

Document: ST/SG/AC.10/C3/2014/34 (Sweden)

Informal documents: INF.48 and INF.48/Rev.1 (Belgium and the

Netherlands)

111. The expert from Sweden withdrew her proposal and said that she would submit a revised one at the next session.

## 2. Use of large salvage packagings

Document: ST/SG/AC.10/C3/2014/19 (Germany)

112. The proposal to add a reference to large packagings in 4.1.1.18 was adopted (see annex I). As this is a consequential amendment resulting from the introduction of paragraph 6.6.5.1.9 concerning large salvage packagings in the 18<sup>th</sup> revised edition of the Recommendations, it should be regarded as a correction and modal organizations were invited to take it into account in the forthcoming amendments of their respective instruments.

#### H. Portable tanks

113. As no document had been submitted under this agenda sub-item, it was not discussed.

### I. Scope of section 5.5.3

114. As no document had been submitted under this agenda sub-item, it was not discussed.

## IX. Electronic data interchange for documentation purposes (agenda item 8)

115. As no document had been submitted under this agenda item, it was not discussed.

## X. Cooperation with the International Atomic Energy Agency (agenda item 9)

Informal document: INF.55 (IAEA)

116. The Sub-Committee took note of the report on the outcome of the 28<sup>th</sup> session of the IAEA Transport Safety Standards Committee (TRANSSC 28) held in Vienna from 16-20 June 2014. It noted also that no amendment to the IAEA Regulations that would have to be reflected in the next revised edition of the United Nations Recommendations was expected, and that the IAEA secretariat had expressed interest in cooperation regarding the security provisions.

## XI. Guiding principles for the Model Regulations (agenda item 10)

117. No specific document had been submitted under this agenda item. Changes to the Guiding Principles were discussed in relation to documents submitted under other agenda items.

## XII. Issues relating to the Globally Harmonized System of Classification and Labelling of Chemicals (agenda item 11)

## A. Desensitized explosives

Document: ST/SG/AC.10/C.3/2014/2 (Germany)

118. This proposal was discussed under agenda item 2 (see paragraph 19 of the report of the Working Group on Explosives in informal document INF.61 and para. 33 of this report).

### B. Pyrophoric gases

Document: ST/SG/AC.10/C.3/2014/54 (United States of America)

Informal documents: INF.7 and INF.40 (United States of America)

- 119. Some questions were raised about:
  - (a) The rationale for creating an additional separate hazard category for pyrophoric gases instead of a sub-category under Category 1 flammable gases, taking into account that the proposed hazard communication elements only differ in the hazard statement;
  - (b) The correlation between the ignition temperature to determine pyrophoricity in DIN Standard 51794 (in paragraph 2.2.4.4.2) and the temperature set out in the definition of pyrophoric gases (in paragraph 2.2.1.2);
  - (c) The rationale for  $54^{\circ}$ C in the definition for pyrophoric gases. The expert from the United States of America explained that this temperature could be reached under normal conditions of transport and therefore this value was kept to ensure that gases able to show a pyrophoric behaviour during transport at this temperature were adequeatly classified as such.
- 120. Comments made will be brought to the attention of the GHS Sub-Committee and taken into account by the expert from the United States of America in his next submission.

## C. Criteria for water-reactivity

121. The expert from the United States of America informed the Sub-Committee that the US Transportation Research Board (TRB) report on criteria for water-reactivity had now been finalized and would be issued and transmitted to the Sub-Committee soon (see also ST/SG/AC.10/C.3/86, para 23, ST/SG/AC.10/C.3/2014/21 and informal document INF.39 submitted at the forty-third session).

## D. Tests and criteria for oxidizing solids

## Use of cellulose in test O.2 (Tests for oxidizing liquids) and in test O.3 (Tests for oxidizing solids)

Document: ST/SG/AC.10/C.3/2014/30 (France)

- 122. The Sub-Committee was reminded that the cellulose grade that has to be used for performing tests O.2 and O.3 is no longer available on the market and that laboratories have to use stocks that are depleting. Therefore the Sub-Committee, as focal point for GHS physical hazards, accepted the proposals to organize a round robin testing programme in order to define the appropriate replacement cellulose and include classification and testing of oxidizing liquids and solids in its programme of work for 2015-2016, subject to endorsement by the GHS Sub-Committee.
- 123. Several experts said they had already expressed interest in participating in the round robin testing programme. The expert from France invited all interested parties to contact him and said that he would propose a calendar for this testing programme at the next session. The expert from the United Kingdom expressed the wish that the data resulting from this testing programme be shared with all experts of the Sub-Committee.

## E. Classification criteria and flammability categories for certain refrigerants

Informal document: INF.50 (Japan)

124. The Sub-Committee noted that work had been initiated and data obtained, but that it will be necessary to gather additional data before submitting proposals. Therefore the Sub-Committee recommended to the GHS Sub-Committee to keep this item in its programme of work for 2015-2016 as focal point for GHS physical hazards.

#### F. Expert judgement/weight of evidence

125. As no document had been submitted under this agenda sub-item, it was not discussed.

### G. Corrosivity criteria

Document: ST/SG/AC.10/C.3/2014/25 (Netherlands)

Informal documents: INF.3 and -/Add.1 (Netherlands)

INF.32 (Netherlands) INF.64 (FEA)

INF.65 (Spain)

126. The Sub-Committee expressed gratitude to the expert from the Netherlands and the intersessional correspondence group for the work accomplished and the proposals made. It supported the approach in informal document INF.32 in principle including the flow

scheme and formula for the assignment of packing groups to mixtures and default classification.

- 127. Several experts noted that concentration limits are indicated in the dangerous goods list only for very few substances and therefore data from the industry indicating the concentration tresholds differentiating packing groups for other substances would be necessary for developing examples of calculation. It was recognized that additional work would be needed on the generic concentration limit approach, and in this respect the proposal by the expert of Spain in INF.65, which had been submitted too late for advance consideration, could be further studied.
- 128. Some experts felt that it would not be necessary to reproduce in Chapter 2.8 of the Model Regulations the whole text of the GHS classification criteria, and that reproducing the information necessary for determining the packing groups and including references to the GHS text would suffice. Other experts felt that Chapter 2.8 should reproduce the whole GHS corrosivity criteria text as proposed in INF.32, in the same way as criteria for aquatic toxicity are reproduced in Chapter 2.9.
- 129. How to refer to OECD Guidelines in Chapter 2.8 should also be considered, since currently Chapter 2.8 refers to dated guidelines while the GHS refers to undated guidelines.
- 130. Delegations were invited to submit official proposals for the next session for issues to be solved. In doing so, they should take account of the outcome of the discussion of the Joint TDG/GHS Working Group on corrosivity criteria that would meet on 2 July 2014 (see informal document INF.34).

#### H. Hazard communication

131. As no document had been submitted under this agenda sub-item, it was not discussed.

#### I. Miscellaneous

#### 1. Use of the Manual of Tests and Criteria in the context of the GHS

Document: ST/SG/AC.10/C.3/2014/61 (Secretariat)

Informal documents: INF.61/Adds 1-5 (Secretariat)

INF.8 (Secretariat) INF.35 (IME)

132. This issue was discussed under agenda item 2 (see paras 34-37 of this report).

#### 2. Dust explosion hazard

Informal document: INF.14 (CEFIC)

133. The Sub-Committee noted the concerns of CEFIC at the possible creation of a class in the GHS for dust explosion. A few delegations shared the concerns of CEFIC and pointed out that this hazard had been addressed in workplace regulations outside the scope of GHS. However, accidents due to dust explosion during storage and in the workplace could not be ignored and the decision to work in this area pertained to the GHS Sub-Committee. If this work had to be pursued, the TDG Sub-Committee, as focal point for physical hazards, was the appropriate body to deal with this issue, even though such accidents did not seem to affect the transport sector. Therefore, if the GHS Sub-Committee decided so, the TDG Sub-Committee could contribute for all GHS sectors.

## XIII. Other business (agenda item 12)

### A. Principles for consideration of informal documents

Document: ST/SG/AC.10/C.3/2014/8 (China)

- 134. The Sub-Committee noted the concerns raised by the expert from China at the practice of adopting amendments on the basis of late informal documents, since this did not allow sufficient time for delegations to study the proposed texts and consult national experts before the session.
- 135. A member of the secretariat recalled rules applicable to United Nations documentation in general and underlined the problems caused by the adoption of texts which had not been translated before the session, since when these texts were too extensive they could not be translated during the session and this entailed problems for the quick issuance of the final report.
- 136. In general, the Sub-Committee agreed that completely new proposals should not be adopted on the basis of informal papers. The Sub-Committee also considered that some flexibility had to be exercised under the direction of the chairman while ensuring that delegations are given sufficient time to study relevant informal papers, in particular very late informal papers introducing substantial new contents. Therefore the Sub-Committee preferred not to lay down too strict rules regarding the consideration of informal documents.

## B. Availability of information on "UN" approved packagings

Informal document: INF.29 (Belgium)

- 137. As agreed at the previous session (ST/SG/AC.10/C.3/88, paras 71-73), the expert from Belgium drafted a text to be included in the draft resolution that should be transmitted to the Economic and Social Council for adoption in 2014, in order to provide the secretariat with a mandate to collect information on competent authorities for the transport of dangerous goods by modes other than air and sea in all countries, and in particular on those concerned by the approval of "UN" packagings, pressure receptacles, bulk containers and portable tanks.
- 138. The Sub-Committee welcomed this proposal which most experts supported, and invited the expert from Belgium to submit it as an official document for the next session.

## XIV. Adoption of the report (agenda item 13)

139. The Sub-Committee adopted the report on its forty-fifth session and its annexes on the basis of a draft prepared by the secretariat.

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