



**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 fiftieth session**

held in Geneva from 28 November to 6 December 2016

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* For practical reasons, this annex has been published in an addendum to this report (ST/SG/AC.10/C.3/100/Add.1).

I. Attendance

1. The Sub-Committee of Experts on the Transport of Dangerous Goods held its fiftieth session from 28 November to 6 December 2016 with Mr. D. Pfund (United States of America) as Chair and Mr. C. Pfauvadel (France) as Vice-Chair.
2. Experts from the following countries took part in the session: Australia, Austria, Belgium, Brazil, Canada, China, Finland, France, Germany, Italy, Japan, Netherlands, Norway, Poland, Portugal, Republic of Korea, 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 Qatar, 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 Food and Agriculture Organization (FAO), the International Civil Aviation Organization (ICAO), the International Maritime Organization (IMO) and the World Health Organization (WHO) were also present.
6. Representatives of the following non-governmental organizations took part in the discussion on items of concern to those organizations: Association of European Manufacturers of Sporting Ammunition (AFEMS), Association of Hazmat Shippers, Inc. (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 Industrial Gases Association (EIGA), European Liquefied Petroleum Gas Association (AEGPL), European Metal Packaging (EMPAC), Federation of European Aerosol Associations (FEA), Institute of Makers of Explosives (IME), International Air Transport Association (IATA), International Association for Soaps, Detergents and Maintenance Products (AISE), International Confederation of Drum Manufacturers (ICDM), International Confederation of Plastics Packaging Manufacturers (ICPP), International Council of Chemical Associations (ICCA), International Council of Intermediate Bulk Container Associations (ICIBCA), International Dangerous Goods and Containers Association (IDGCA), International Fibre Drum Institute (IFDI), International Fishmeal and Fish Oil Organization (IFFO), International Organization of Motor Vehicle Manufacturers (OICA), International Paint and Printing Ink Council (IPPIC), International Petroleum Industry Environmental Conservation Association (IPIECA), KiloFarad International (KFI), Medical Devices Battery Transport Council (MDBTC), PRBA - The 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 World Liquefied Petroleum Gas Association (WLPGA).

II. Adoption of the agenda (agenda item 1)

Documents: ST/SG/AC.10/C.3/99 (Provisional agenda)
ST/SG/AC.10/C.3/99/Add.1 (List of documents).

Informal documents: INF.1, INF.2 (List of documents)
INF.10 (Provisional timetable)
INF.20 (Reception organized by NGOs)

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

III. Recommendations made by the Sub-Committee on its forty-seventh, forty-eighth and forty-ninth sessions and pending issues (agenda item 2)

A. Review of draft amendments already adopted during the biennium

Document: ST/SG/AC.10/C.3/2016/55 (Secretariat)

8. The Sub-Committee confirmed the decisions taken at the previous sessions on the basis of the consolidated text prepared by the secretariat, subject to a number of modifications and to the new decisions taken in respect of the various agenda items, including under sub-items 2 (b) to 2 (i) (see annex I).

Criteria in paragraphs 33.2.1.4.4.1 to 33.2.1.4.4.3 of the Manual of Tests and Criteria

Informal document: INF.27 (Germany)

9. The Sub-Committee decided that the square brackets around the paragraphs concerned in document ST/SG/AC.10/C.3/2016/55 should be deleted. The questions raised in informal document INF.27 in relation to the test method N.1 for readily combustible solids required further consideration and should therefore be discussed during the next biennium.

B. Explosives and related matters

10. After a preliminary consideration in the plenary, most of the questions under the agenda item were referred to the Working Group on Explosives, which met from 28 November to 2 December 2016, under the chairmanship of Mr. E. de Jong (Netherlands).

11. Similarly, the following were referred to the Working Group on Explosives: the documents falling under sub-item 7 (g) on the use of the Manual of Tests and Criteria in the context of GHS; those falling under sub-item 7 (h) (Review of Chapter 2.1 of GHS); informal document INF.30 under item 6; and informal document INF.39 under item 8.

Report of the Working Group on Explosives

Informal document: INF.59 (Working Group on Explosives)

12. Having considered the report of the Working Group on Explosives and heard the explanations provided by its Chairman, the Sub-Committee reached the conclusions listed below for each subject under consideration under agenda item 2 (b).

1. Proposal for replacing dibutyl phthalate (DBP) in Koenen Test

Document: ST/SG/AC.10/C.3/2016/13 (France)

13. The Sub-Committee adopted specifications for suitable alternates for DBP and decided that the amendments proposed should be treated as corrections to the sixth revised edition of the Manual of Tests and Criteria (see annex II).

2. Chapter 2.1 of the Model Regulations-Class 1 definition/Chapter 2.1 of the GHS-Class of explosives

Documents: ST/SG/AC.10/C.3/2016/53 - ST/SG/AC.10/C.4/2016/14 (AEISG)

14. The Sub-Committee adopted the proposed amendment to 2.1.1.1 (c) of the Model Regulations (see annex I) and the corresponding amendments to 2.1.1.2 (c) of the GHS, and Note b to Table 2.1.1 of the GHS, which had also been proposed to the GHS Sub-Committee in ST/SG/AC.10/C.4/2016/14. This decision should be brought to the attention of the GHS Sub-Committee.

3. Section 10.3.3 of the Manual of Tests and Criteria – Guidance about application of Test Series 3 and 4

Document: ST/SG/AC.10/C.3/2016/60 (Sweden, AEISG)

15. The Sub-Committee adopted the amendments to section 10.3.3 of the Manual of Tests and Criteria proposed by the Working Group (see annex I) and noted that the experts from Sweden and the United States of America would consider developing further proposals in the next biennium.

4. Transport of energetic samples

Document: ST/SG/AC.10/C.3/2016/61 (CEFIC)

Informal document: INF.23 (CEFIC)

16. Several delegations felt that the packing conditions proposed were too detailed, but the Sub-Committee considered that these provisions were urgently needed and that including provisions based on test results was the best solution at this time. There was consensus on the proposed amendments 2 and 3 in annex 2 of the report, but several editorial modifications were made to amendments 4 and 5 which were put to the vote, as amended, and adopted (see annex I).

5. Classification of ammonium nitrate fertilizers

Document: ST/SG/AC.10/C.3/2016/66 (Sweden)

Informal documents: INF.9 (AEISG)
INF.47 (IME)

17. The Sub-Committee adopted the amendments to the Model Regulations proposed by the Working Group as amendment 6 in annex 2 of its report, as well as the addition of a new section 39 in the Manual of Tests and Criteria as modified by amendment 6 in annex 3 of the report (see annex I).

18. The expert from the United States of America proposed to amend 39.4.4 in order to provide discretion to the competent authority to determine the appropriate transport

classification when the fertilizers have been tested negatively in accordance with Test Series 2, even when the composition limits relevant for inclusion in the class of explosives are met. There was no support for this proposal.

6. Application of security provisions to Explosives N.O.S.

Informal documents: INF.33 (Italy)
INF.44 (United Kingdom)

19. The Sub-Committee noted the recommendation of the Working Group to include Division 1.6 explosives in table 1.4.1 of the Model Regulations as high-consequence dangerous goods. However several experts underlined that this recommendation was based on informal documents that had been submitted very late and the Sub-Committee agreed that this recommendation would have to be considered again in the next biennium on the basis of an official proposal that the expert from the United Kingdom offered to prepare.

20. More generally, for explosives classified under n.o.s entries, the Sub-Committee noted the view of the Working Group that an alternate solution for the time being would be to identify required security provisions on specific competent authority approvals, and that this alternate solution was acceptable to the expert from Italy.

C. Listing, classification and packing

1. Proposal to modify packing instruction P902

Document: ST/SG/AC.10/C.3/2016/59 (COSTHA)

21. The proposal to modify packing instruction P902 was adopted and extended to packing instruction LP902 (see annex I).

2. Reflection of toxicity for UN Nos. 2248, 2264 and 2357

Document: ST/SG/AC.10/C.3/2016/64 (Republic of Korea)

Informal document: INF.42 (CEFIC)

22. The Sub-Committee noted that the data provided by the Republic of Korea needed further consideration. It also noted that substances belonging to Class 8, packing group II and, because of their inhalation toxicity, to Division 6.1, packing group II, should be classified in Division 6.1 rather than Class 8. Some experts also thought that it would be important to check thoroughly whether the proposed changes in classification would not imply changes in conditions of transport.

23. The expert from the Republic of Korea said that she would submit a new proposal at the next session.

3. Packing instruction P620 for Category A infectious substances

Informal document: INF.19 (Norway)

24. The proposed amendment to additional requirement 3 of packing instruction P620 was adopted (see annex I).

4. Proper shipping name for a polymerizing substance that does meet other criteria for inclusion in Classes 1-8

Document: ST/SG/AC.10/C.3/2016/72 (Austria)

25. The proposal to include a new subparagraph (b) to 3.1.2.6 to add the words “TEMPERATURE CONTROLLED” to the official shipping name when temperature control must be used was put to a vote and adopted (see annex I)

5. Exemptions for polymerizing substances

Informal document: INF.29 (CEFIC)

26. Although several delegations expressed their support for the principle of the proposal, as it had been submitted late, CEFIC was requested to submit a formal proposal at the next session.

6. Special provision 308 for fish meal (fish scrap), stabilised (UN No. 2216): Class 9

Document: ST/SG/AC.10/C.3/2016/82 (IFFO)

Informal document: INF.24 (IFFO)

27. It was emphasized that the transport of stabilized fish meal had been subject only to regulations for maritime transport and that the proposal contained in informal document INF.24 would affect only the IMDG Code. The question thus arose as to whether that proposal should not first be referred to IMO for consideration.

28. The Sub-Committee agreed that it would ultimately fall to IMO to give an opinion on the requisite amendments to the IMDG Code, but that, as the problem raised should be resolved as quickly as possible, it would be desirable to amend special provision 308 immediately even if that meant having to go back over the matter after IMO had also discussed it.

29. The proposed amendment was therefore put to a vote and adopted without any objections (see annex I).

7. Classification of infected animals

Document: ST/SG/AC.10/C.3/2016/77 (WHO and FAO)

30. Opinions were divided on whether the proposed changes to the definition of patient specimens and animal material might lead to confusion. The three proposals were put to the vote separately and adopted. The Sub-Committee noted that the adoption of the amendments to 2.6.3.6.2 rendered that paragraph unnecessary and therefore decided to delete it (see annex I).

8. Revision of Chapter 2.8

Document: ST/SG/AC.10/C.3/2016/50 (Canada, CEFIC and AISE)

Informal documents: INF.5, INF.25 and INF.49 (Canada, CEFIC and AISE)

31. Further to some editorial comments on the proposals of Canada, CEFIC and AISE, the Sub-Committee adopted the revised text of Chapter 2.8 presented in informal document INF.49, with the remaining square brackets deleted.

32. As for the mention of 2015 for the OECD guidelines referenced in footnotes 1-4, the Sub-Committee was of the view that, in practice, for classifications done before the entry into force of those new provisions, the principles established by OECD should be upheld. According to those principles, test results obtained from a deleted guideline or from a former edition of an updated guideline remained acceptable if the test had begun before the effective date of deletion of the guideline or of deletion of the former edition of the updated guideline. The date of deletion became effective 18 months after the OECD Council took a decision on the deletion.

33. It was emphasized that that revised version of Chapter 2.8 reflected the effort to harmonize it with the provisions of GHS in the transport sector even if some differences remained. The Chair would explain to the GHS Sub-Committee the outstanding differences and the reasons for those differences.

9. Dangerous goods in machinery, apparatus or articles, N.O.S

Documents: ST/SG/AC.10/C.3/2016/54 (United Kingdom)
ST/SG/AC.10/C.3/2016/49 (Germany)

Informal document: INF.54 (United Kingdom)

34. Following discussion in plenary session and lunchtime working group sessions, the proposals in informal document INF.54 were adopted with some changes (see annex I).

10. Transport of Category A infectious wastes

Documents: ST/SG/AC.10/C.3/2016/65 (United Kingdom and Canada)
ST/SG/AC.10/C.3/2016/69 (Germany)

Informal documents: INF.37 (Germany)
INF.56 and INF.56/Rev.1 (Canada, Germany and United Kingdom)

35. Despite long discussions in plenary session and lunchtime working group meetings, the Sub-Committee considered that there was not enough consensus on the proposals in INF.56/Rev.1 to take a sound decision at this session and decided that this question should be further discussed during the next biennium. Interested delegations were invited to contact the expert from Canada who will organize conference calls in order to prepare a new proposal for consideration at the next session.

D. Electric storage systems

1. Large packagings for lithium batteries of small production runs or for prototype lithium batteries

Document: ST/SG/AC.10/C.3/2016/52 (Germany)

36. The proposal presented as option 1 was adopted with some editorial changes (see annex I).

37. It was recalled that the Sub-Committee had already agreed that, when there was a reference to carriage without packaging in the packing instructions in Chapter 4.1, for example P903 (4), P909 (3) etc., there was no limit on the maximum mass of the articles or equipment that could be carried unpackaged. It was agreed, however, that it would be useful for that interpretation to be reflected in the text of the Model Regulations in future.

2. CTUs equipped with tracking devices containing lithium batteries

Document: ST/SG/AC.10/C.3/2016/56 (Germany)

38. Opinion was divided on the proposal to introduce a new section into Chapter 5.5 regarding provisions for tracking devices. Concerning the drafting of the proposed text, it was noted that the provisions should be applied to tracking devices rather than cargo transport units, as CTUs might contain other dangerous goods. Some delegations said that Chapter 5.5 was not the ideal place or that the matter should be dealt with in modal instruments governing the carriage of dangerous goods, or even instruments governing cargo transport units in general. Others said that the question should be addressed in a more

general way, for example through a special provision or in Part 1, given that equipment other than cargo transport units, such as packaging or pallets, might also be fitted out with such devices.

39. It was pointed out that those tracking devices might contain powerful lithium batteries. Several delegations considered that there was good reason to include provisions in the Model Regulations even if they were not prepared to make a decision at the present session on the basis of the document from Germany.

40. The expert from Germany withdrew her proposal but said that she might raise the question again in the next biennium.

3. Transport of damaged/defective lithium batteries, step I

Document: ST/SG/AC.10/C.3/2016/67 (OICA, RECHARGE)

Informal documents: INF.50 and INF.55 (RECHARGE and OICA)

41. The proposals made in the document were discussed at length. The Sub-Committee was aware of the rapid developments in the electric vehicles market and of situations that the industry and the competent authorities would have to deal with in the case of accidents that could damage the batteries, but several delegations were not prepared to adopt the proposals as they stood. Some considered it regrettable that the concepts of damage and fault were still not clearly defined and that the proposed text still called for action by the competent authority if the damaged or defective batteries were liable to react dangerously. A number of delegations welcomed the inclusion in the annex of advice for the competent authorities, but found it unclear how that advice would be made available to the competent authorities.

42. The representative of OICA proposed drafting a new proposal during the session, taking account of the comments made. The Sub-Committee agreed to that suggestion, on the condition that it should have sufficient time to examine the new proposal.

43. A first draft (INF.50) was developed in parallel to the plenary session, which led to a second draft (INF.55). When discussed in plenary session, the proposals contained in INF.55 were amended editorially, then put to the vote and adopted with a large majority (see annex I).

4. Transport of damaged/defective lithium batteries, step II

Informal document: INF.22 (RECHARGE)

44. The Sub-Committee noted the information provided on the types of hazards that may result from lithium batteries and the envisaged levels of severity that would make it possible, in the second stage of the work, to provide for appropriate packaging for damaged or defective batteries.

5. Classification of rechargeable lithium metal polymer batteries

Document: ST/SG/AC.10/C.3/2016/68 (RECHARGE and PRBA)

45. Most delegations agreed that the current provisions for lithium metal batteries applied. Many delegations recognized the industry's efforts to develop less dangerous cells and batteries but they were not in favour of adding new entries to the list of dangerous goods whenever new technologies emerged. Some considered that the problems related to the transport of lithium batteries should be addressed more generically and that the work described in informal document INF.22 could offer a possible solution in the future.

46. The representative of RECHARGE concluded that, for the time being, his proposal did not have sufficient backing. He withdrew it.

6. Comments on the new entry for lithium batteries installed in cargo transport units (UN No. 3536 and special provision 389)

Informal document: INF.43 (Switzerland)

47. With the exception of proposal 1, which was adopted (see annex I), in the view of most experts the comments had been submitted too late, and the experts thus had not had sufficient time to carry out the necessary consultations in advance. The expert from Switzerland said that he would prepare an official proposal during the forthcoming biennium, after discussion with the experts concerned.

7. The safe transport of lithium batteries by air

Document: ST/SG/AC.10/C.3/2016/84 (ICAO)

Informal documents: INF.22 (RECHARGE)
INF.31 and Add.1 and 2 (France)

48. The Sub-Committee noted that ICAO was continuing its work to address problems related to the specific requirements of air transport and had expressed the desire to work with the Sub-Committee specifically on:

- (a) establishing greater granularity with respect to the classification of different lithium cell and battery types;
- (b) addressing the risks posed by non-compliant shipments..

49. The Sub-Committee agreed to follow up on the request from ICAO and to include a specific item in its programme of work. It would, however, be necessary to proceed in stages. The first stage would consist in developing an entirely new system of criteria based on the intrinsic hazards posed by the various types of cells and batteries. In that connection, the Sub-Committee welcomed the work already done by France, as described in informal documents INF.31 and Add.1 and 2, in particular the two studies performed by INERIS (INF.31/Add.1, Opportunity of having a classification system for the transport of batteries, basic specifications for a testing programme; and INF.31/Add.2, Comparison of thermal and toxic effects of the fire of batteries and other goods in transport by a heavy goods vehicle). In the second stage, once the criteria were established, it would be possible to determine the corresponding conditions of transport (see also under item 8, Programme of work for the biennium 2017-2018).

50. The Sub-Committee reaffirmed its commitment to addressing concerns expressed by ICAO, specifically to working with ICAO more closely to address this important agenda item including Sub-Committee involvement within ICAO Dangerous Goods related meetings.

8. Sodium-ion batteries

Informal document: INF.13 (United Kingdom)

51. The Sub-Committee accepted a proposal to consider the question of the carriage of sodium-ion batteries during the forthcoming biennium.

9. Amendments to Special Provision 376

Informal document: INF.45 (PRBA)

52. Several delegations noted that there had been lengthy discussions on the text of Special Provision 376 in the past and they did not wish to amend it on the basis of a last-minute informal document.

53. The expert from France said that the Special Provision did not apply to all damaged or defective batteries, but only to those that no longer corresponded to the tested type.

54. The representative of PRBA said that he would raise the matter again during the next biennium.

10. Corrections to ST/SG/AC.10/C.3/2016/55, paragraph 38.3.3 (c) of the Manual of Tests and Criteria

Informal document: INF.57 (France)

55. The correction proposed by France to the previously adopted amendment was adopted (see annex I).

11. Lithium battery test report

Document: ST/SG/AC.10/C.3/2016/74 (PRBA)

ST/SG/AC.10/C.3/2016/75 (France)

Informal documents: INF.51 (PRBA; RECHARGE)
INF.61 (United States of America on behalf of a drafting group)

56. The Sub-Committee decided that a requirement for the availability of a test summary should be included in section 2.9.4 of the Model Regulations but that the details of the test summary should be indicated in the Manual of Tests and Criteria. The drafting of texts reflecting this decision and other comments made by delegations was entrusted to a drafting group whose conclusions (INF.61) were adopted with some modifications (see annex I).

12. Requirements for packing damaged or defective lithium batteries

Document: ST/SG/AC.10/C.3/2016/76 (PRBA)

Informal document: INF.52 (PRBA)

57. Several experts felt that the question of recall/recovery of defective or damaged small batteries from consumers should preferably be dealt with at modal level and were not favourable to the PRBA proposals since effective collection systems were already in place at regional level.

58. Following discussion in plenary session and consultation with interested delegations, the representative of PRBA drafted a new proposal of amendment to special provision 376 in INF.52. As there was still reluctance to the adoption of this proposal, the representative of PRBA withdraw it and said he would submit new proposals in the next biennium to take account of the various comments made.

13. Lithium battery T.2 thermal test

Document: ST/SG/AC.10/C.3/2016/81 (PRBA, RECHARGE)

Informal documents: INF.40 (PRBA, RECHARGE)
INF.58 (PRBA)

59. Although some experts agreed that there might be some procedural problems due to the activation of safety protective components when testing cells or batteries equipped with such components, most experts did not support the proposal of decreasing the testing temperature from 72 to 65° C.

60. The representative of PRBA said that he would consider submitting a new proposal in the next biennium to take account of the comments made.

14. Editorial correction to 3.3.1

Informal document: INF.48 (Germany)

61. The Sub-Committee agreed that the introductory text of 3.3.1 should be amended but preferred to replace the current marking example by a reference to the marking of “LITHIUM BATTERIES FOR DISPOSAL” as required under special provision 377 (see annex I).

E. Transport of gases

Transport of gas tanks for motor vehicles

Document: ST/SG/AC.10/C.3/2016/51 (Germany)

Informal document: INF.53 (Germany)

62. The Sub-Committee adopted by consensus the proposals made by Germany on the basis of option 2 in document ST/SG/AC.10/C.3/2016/51, revised during the session in line with informal document INF.53, with some corrections (see annex I).

F. Miscellaneous pending issues

Polymerizing substances - information on emergency and control temperatures

Document: ST/SG/AC.10/C.3/2016/70 (Germany)

Informal document: INF.41 (United Kingdom)

63. The Sub-Committee adopted the proposals made by Germany with some changes (see annex I). The proposals made by the United Kingdom had been transmitted too late for the experts to consider them during the current session and would thus need to be submitted to a future session, if the expert from the United Kingdom wished to do so.

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

Differences related to UN 1386 in the IMSBC and IMDG codes and the Model Regulations

Document: ST/SG/AC.10/C.3/2016/63 (Spain)

Informal document: INF.4 (Spain)

64. The Sub-Committee noted the concern of the expert from Spain at the differences between the description of the entry for seed cake (UN No. 1386) in the IMDG Code and the Model Regulations. The representative of IMO explained that this issue was currently under discussion at IMO and was complex because the entries UN No. 1386 and UN No. 2217 were both used in the context of carriage in packaged form (IMDG Code) and that of solid bulk cargoes (IMSBC Code) and a correspondence group had been established to consider the question.

65. The Sub-Committee was conscious that seed cake is carried in very large quantities by sea and invited IMO to keep it informed of the developments notably if IMO felt that the current description in the Model Regulations would need be amended. It wished that, as a result of this work, the descriptions could be harmonized as appropriate in order to avoid misunderstandings and confusion.

V. Guiding Principles for the Model Regulations (agenda item 4)

Assignment of E-Codes

Document: ST/SG/AC.10/C.3/2016/78 (United States of America)

Informal document: INF.6 (United States of America)

66. The Sub-Committee agreed to replace the table of the Guiding Principles by that proposed by the expert from the United States of America (see annex III).

VI. Cooperation with the International Atomic Energy Agency (agenda item 5)

Informal document: INF.28 (Secretariat)

67. The various corrections to the 19th revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations, proposed by the Secretariat, were adopted (see annex IV).

VII. New proposals for amendments to the Model Regulations on the Transport of Dangerous Goods (agenda item 6)

A. Amendments to section 2.9.4 - lithium batteries and special provision 310

Document: ST/SG/AC.10/C.3/2016/71 (PRBA and RECHARGE)

68. Some delegations supported the deletion of provisions that were redundant, but, in general, experts would like to keep the essential requirements for classification in section 2.9.4.

69. It was also confirmed that the application of special provision 310 did not entail an exemption from the application of the requirements in 2.9.4.

70. It was noted that, in practice, compliance with the 2.9.4 (c) was not necessarily achieved by design, as protection against a short circuit during carriage was sometimes achieved by removable means of protection, for example when units were being transported for installation on specialized systems.

71. In the light of the discussions, the representative of PRBA withdrew his proposal and said that he would return to it during the next biennium.

B. Maximum capacity of composite packagings 6HH1 for packing group I

Document: ST/SG/AC.10/C.3/2016/57 (ICPP)

Informal document: INF.3/Rev.1 (ICPP)

72. The proposal to set the maximum capacity at 250 litres instead of 120 litres was adopted by consensus (see annex I).

C. Lead lining testing requirements for bromine portable tanks

Document: ST/SG/AC.10/C.3/2016/79 (United States of America)

Informal document: INF.34 (United States of America)

73. The proposal to amend the T10 portable tank instruction to allow the transport of uncleaned empty bromine tanks for three months after the date of expiry of the last liner inspection was adopted (see annex I).

D. Classification of mixtures of environmentally hazardous substances

Document: ST/SG/AC.10/C.3/2016/80 (United States of America)

74. The Sub-Committee agreed that the end of the sentence in 2.9.3.4.6.5.1, which came from GHS, was not relevant to the Model Regulations and so approved the proposal that should be deleted (see annex I).

E. Marking and documentation of large salvage packagings

Informal document: INF.26 (Germany)

75. The proposed amendments to 5.2.1.3 and 5.4.1.5.3 were adopted (see annex I).

F. Adsorbed gases – exemptions for gases of division 2.2 (non-toxic, non-flammable)

Informal document: INF.38 (Germany)

76. As the proposal had been submitted late and not all delegations had the possibility to carry out the necessary consultations, the proposal of amendment to 2.2.2.3 was deferred to the next session.

G. New UN entries for electronic detonators

Informal documents: INF.30 (AEISG)

INF.59 (Report of the Working Group on Explosives)

77. Noting the conclusions of the Working Group on Explosives (Informal document INF.59, paragraph 10), the Sub-Committee agreed that those delegations interested in introducing new entries for electronic detonators should study the characteristics related to

transport safety and make proposals in the future if they believed that information gathered warranted further consideration.

VIII. Issues relating to the Globally Harmonized System of Classification and Labelling of Chemicals (agenda item 7)

A. Criteria for water-reactivity

78. As no document had been submitted under this agenda sub-item, no discussion took place on the subject, except that it should remain in the programme of work for the next biennium.

B. Tests and criteria for oxidizing liquids (Test O.2) and oxidizing solids (Test O.3)

Document: ST/SG/AC.10/C.3/2016/73 (France)

79. The Sub-Committee took note of the final results of the Round Robin testing programme and adopted proposals 1 to 4. For the cellulose specifications for tests O.1 and O.3, it was noted that the apparent density of 170 kg/m³ was approximate and the texts were modified accordingly.

80. The Sub-Committee noted that some improvements in test materials and procedures might be needed as a consequence of the replacement of cellulose and therefore adopted proposal 5 to keep this item in the programme of work of the next biennium.

81. The Sub-Committee agreed that the replacement of the cellulose for future tests does not invalidate the test results obtained with the cellulose grade currently referred to in the Manual.

82. The Sub-Committee invited the GHS Sub-Committee to take note of these developments and to concur with the conclusions.

C. Classification criteria for flammable gases

Document: ST/SG/AC.10/C.3/2016/58 (Belgium, Japan)

Informal documents: INF.12 and INF.32 (Belgium, Japan)
INF.15 (Secretariat)
INF.35 (EIGA)

83. The Sub-Committee recommended that the GHS Sub-Committee adopt the amendments to the GHS proposed by Belgium and Japan on behalf of the informal working group on classification criteria and hazard communication elements for flammable gases in document -/C.3/2016/58 and informal document INF.32 with the modifications proposed by the Secretariat in INF.15.

84. For the options proposed in INF.32 for an explanatory note b) to table A 1.2, the Sub-Committee felt that no note was necessary since the proposed note related to the Division 2.1 transport pictogramme which was required in transport for the pyrophoric gases and chemically unstable gases of the GHS hazard category 1A.

85. For the EIGA proposal in informal document INF.35, the general view was that it would be logical to amend the examples given in 2.2.5 and 2.4.4.2 to take account of the

changes to ISO 10156:1996 reflected in ISO 10156:2010, but the Sub-Committee felt that it was up to the GHS Sub-Committee to decide whether the example in 2.2.5 should be updated or both examples in 2.4.4.2 and 2.2.5 should simply be deleted as recommended by EIGA.

D. Expert judgement and weight of evidence

86. As no document had been submitted under this agenda sub-item, no discussion took place on this subject which was withdrawn as specific item from the programme of work of the next biennium.

E. Corrosivity criteria

87. As no document had been submitted under this agenda sub-item, no discussion took place on this subject which was withdrawn as specific item from the programme or work of the next biennium.

F. Updating of references to OECD Guidelines

88. As no document had been submitted under this agenda sub-item, no discussion took place on this subject, but it was decided to keep it in the programme of work of the next biennium.

G. Use of the Manual of Tests and Criteria in the context of the GHS

Documents: ST/SG/AC.10/C.3/2016/83 (Chairman of the Working Group on Explosives)

Informal documents: INF.7 and Adds. 1-5 (Chairman of the Working Group on Explosives)
INF.14 (Germany)
INF.17 (United States/Canada)
INF.36 (Secretariat)
INF.59 (Report of the Working Group on Explosives)

89. Regarding the use of the Manual of Tests and Criteria in the context of the GHS, the Sub-Committee noted that the Working Group had agreed only upon a number of amendments to the Manual concerning sections 11, 12, 13, 15, 16, 17 and 18 and appendices 5 and 6 and that this work would have to be pursued during the next biennium. The Secretariat was requested to consolidate the amendments agreed upon by the Working Group in a document to be submitted at the next session.

90. The Sub-Committee agreed that the amendments to 11.4.1.2.1 and to 13.6.1.3.2 proposed in ST/SG/AC.10/C.3/2016/83 should be treated as corrections and included in an erratum to the sixth revised edition of the Manual of Tests and Criteria, together with the corrections proposed by the Secretariat in informal document INF.36 (see annex II).

H. Review of Chapter 2.1 of the GHS

Informal documents: INF.11 (Sweden)
INF.18 (United States of America)

91. The Sub-Committee noted also that work on the review of Chapter 2.1 of the GHS would have to be pursued during the next biennium. The Sub-Committee felt that the involvement of experts from sectors other than transport in the work of the Working group on Explosives was highly desirable and expressed the wish that more experts from other sectors would attend its sessions in future.

I. Miscellaneous

Corrections to the classification of flammable liquids

Document: ST/SG/AC.10/C.3/2016/62 (Germany)

92. Some experts said that they had not had enough time to evaluate the downstream consequences of the corrections proposed by Germany. The Sub-Committee noted that the corrections were not intended to modify the current transport criteria, and if this were the case, had no objection to the corrections proposed if deemed relevant by the GHS Sub-Committee.

IX. Programme of work for the biennium 2017-2018 (agenda item 8)

A. Outcome of the evaluation of the global and regional impact of UNECE regulations and United Nations Recommendations on the Transport of Dangerous Goods (2005-2014).

93. The Sub-Committee noted that the evaluation report referred to at the last session (ST/SG/AC.10/C.3/98, paragraph 40 and informal document INF.74 of the forty-ninth session) had been made available on the UNECE website¹ together with a management response and a progress report on follow-up action to be undertaken.

94. The Sub-Committee noted that the report contained suggestions for items to be included in the programme of work in relation to cooperation with customs, dangerous goods in mail, the development of guidance for implementation and the development of guiding principles for modal regulations. However, the Sub-Committee considered that such items could be included in the programme of work only upon proposal by volunteering delegations committed to lead such work.

B. Development of a comprehensive risk-based system to classify lithium batteries and cells for transport

Informal document: INF.60/Rev.1 (United States of America)

95. The Sub-Committee agreed to include this item in the programme of work on the understanding that the system would not be a risk-based system but an hazard-based

¹ <https://www.unece.org/info/open-unece/evaluation.html>

system. The work would be carried out by the informal working group on lithium batteries under the chairmanship of the expert from France, and it could be expected that COSTHA, PRBA and RECHARGE would provide administrative support. At the first session, which the representative of ICAO offered to host, the group would look at all available data that can already be useful to analyse the effects produced by lithium batteries when they react, and would identify the additional data needed. It would also prepare a work plan that would be submitted to the Sub-Committee for approval at its next session.

C. Stability tests for industrial nitrocellulose

Informal documents: INF.39 (Germany)
INF.59 (Report of the Working Group on Explosives)

96. The Sub-Committee agreed that the question of stability tests for industrial nitrocellulose should be included in the programme or work of the next biennium.

D. Working Group on Explosives

97. The Sub-Committee agreed that the Working Group should meet again four times during the next biennium under the Chairmanship of Mr. E de Jong (Netherlands).

E. Consolidated programme of work for 2017-2018

98. On the basis of the proposals discussed and approved under the various agenda items for this session, the Sub-Committee agreed to include the following items in its work programme for 2017-2018:

(a) Explosives and related matters (including amendments to the list of dangerous goods, electronic detonators; review of test series 6; review of tests in parts I, II and III of the Manual of Tests and Criteria (including UN standard detonator, minimum burning pressure (MBP) tests as a possible alternate or replacement for the 8(c) and/or the 8(d) tests); guidance for application of Test Series 3 and 4; review of packing instructions for explosives; stability tests for industrial nitrocellulose; application of security provisions to explosives N.O.S.; classification of articles under UN 0349; test N.1 for readily combustible solids; and review of Chapter 2.1 of the GHS);

(b) Listing, classification and packing (including amendments to the list of dangerous goods and packing instructions, toxicity of UN Nos. 2248, 2264 and 2357, polymerizing substances, seed cake, category A infectious waste);

(c) Electric storage systems (including testing of lithium batteries; hazard-based system for classification of lithium batteries; transport provisions; damaged or defective lithium batteries; and sodium-ion batteries);

(d) Transport of gases (including global recognition of UN and non-UN pressure receptacles);

(e) Miscellaneous proposals of amendments to the Model Regulations (including marking and labelling issues; packaging issues; tank issues);

(f) Cooperation with IAEA ;

(g) Global harmonization of transport of dangerous goods regulations with the Model Regulations;

(h) Guiding principles for the Model Regulations (updating) ;

(i) Issues relating to the GHS (including criteria for water-reactivity; testing of oxidizing substances; references to OECD Guidelines; use of the Manual of Tests and Criteria in the context of GHS).

X. Draft resolution 2017/... of the Economic and Social Council (agenda item 9)

Informal document: INF.21 (consolidated draft resolution) (Secretariat)

99. The Sub-Committee adopted, without any objection, part A of the proposal draft resolution, on the understanding that, for the Manual of Tests and Criteria, only the amendments would need to be published and that the publication of a full revised edition was not necessary.

XI. Election of officers for the biennium 2017-2018 (agenda item 10)

100. Mr. D. Pfund (United States of America) and Mr. C. Pfauvadel (France) were re-elected respectively Chairman and Vice-Chairman of the Sub-Committee for the biennium 2017-2018, by acclamation.

XII. Other business (agenda item 11)

A. Application for consultative status by the Medical Device Battery Transport Council (MDBTC)

Informal document: INF.8 (MDBTC)

101. The Sub-Committee decided, by majority vote, to grant consultative status to MDBTC in order to allow this organization to participate in discussions within its area of competence. MDBTC was invited to provide relevant data in order to contribute to future work on the development of a new comprehensive hazard based system to classify lithium batteries and cells for transport.

B. Tribute to Mr. P. van Lancker (Belgium)

102. The Sub-Committee was informed that Mr. P. van Lancker, who had served on the Sub-Committee as the observer from Belgium from 1989 to 1992, and then, once Belgium got the status of full member, as expert from Belgium since 1993, was attending a session of the Sub-Committee for the last time since he would be retiring soon. Mr. P. van Lancker had also represented Belgium at IMO meetings dealing with dangerous goods, solid bulk cargoes and liquid bulk chemicals, for many years and he had notably chaired the IMO Editorial and Technical Group. The Sub-Committee thanked him warmly for his outstanding contribution to the safe transport of dangerous goods and wished him a long and happy retirement.

C. Condolences

103. The Sub-Committee learnt with great sadness that Mr. John Monteith, former expert from Canada and Vice-Chair of the Sub-Committee from 1988 to 1996 had passed away. The Chairman expressed condolences to the delegation of Canada on behalf of the Sub-Committee and invited it to convey them to the family.

XIII. Adoption of the report (agenda item 12)

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

Annex I

Draft amendments to the Recommendations on the Transport of Dangerous Goods, Model Regulations and Manual of tests and Criteria

The draft amendments adopted during the session were listed in documents ST/SG/AC.10/C.3/2016/CRP.4 and Adds. 1–5.

They were adopted with some minor corrections and transmitted to the Committee, which endorsed them, as corrected, at its eighth session (9 December 2016). The adopted texts may be found as annexes I and II to the Committee's report as follows:

- Amendments to the Recommendations on the Transport of Dangerous Goods, Model Regulations: ST/SG/AC.10/44/Add.1;
- Amendments to the Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria: ST/SG/AC.10/44/Add.2.

Annex II

**Corrections to the sixth revised edition of the
Recommendations on the Transport of Dangerous Goods,
Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.6)**

Annex III

**Amendments to the Guiding Principles for the development
of the Model Regulations**

Annex IV

**Corrections to the nineteenth revised edition of the
Recommendations on the Transport of Dangerous Goods,
Model Regulations (ST/SG/AC.10/1/Rev.19)**
