



**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 fifty-fifth session**

held in Geneva from 1 to 5 July 2019

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I. Attendance

1. The Sub-Committee of Experts on the Transport of Dangerous Goods held its fifty-fifth session from 1 to 5 July 2019 with Mr. Duane Pfund (United States of America) as Chair and Mr. Claude 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, Republic of Korea, Russian Federation, 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 Croatia, the Democratic Republic of the Congo, Luxembourg, Romania, Slovakia and Turkey 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), Australian Explosives Industry Safety Group (AEISG), Association of Hazmat Shippers, Inc. (AHS), 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), Federation of European Aerosol Associations (FEA), Institute of Makers of Explosives (IME), International Air Transport Association (IATA), International Association of Fire and Rescue Services (CTIF), International Confederation of Container Reconditioners (ICCR), International Confederation of Drums Manufacturers (ICDM); International Confederation of Plastics Packaging Manufacturers (ICPP), International Council of Intermediate Bulk Container Associations (ICIBCA), International Dangerous Goods & Containers Association (IDGCA), International Fibre Drum Institute (IFDI), International Organization of Motor Vehicle Manufacturers (OICA), International Paint and Printing Ink Council (IPPIC), International Tank Container Organisation (ITCO), Kilofarad international (KFI), Medical Devices Battery Transport Council (MDBTC), Metal Packing Europe (MPE), PRBA — The Rechargeable Battery Association (PRBA), Responsible Packaging Management Association of Southern Africa (RPMASA), Sporting Arms and Ammunition Manufacturers' Institute (SAAMI) and Stainless Steel Container Association (SSCA).

II. Opening of the session

Changes in the secretariat

7. Mr. Yuwei Li, the Director of the Sustainable Transport Division informed the Sub-Committee that the recruitment process for the post of Chief of Section had been completed with the appointment, as of 1 June 2019, of Mr. Romain Hubert as Chief of the "Road Safety Management and Dangerous Goods Section". He thanked the dangerous goods team for the excellent work done during the interim period between the retirement of Mr. Kervella and

the recruitment of Mr. Hubert, to avoid disruption of services. The Sub-Committee welcomed Mr. Hubert and joined Mr. Li on its appreciation of the excellent performance of the dangerous goods team during that period, and in particular of Ms. Garcia Couto during her time as secretary of the Sub-Committee and acting chief of the section.

III. Adoption of the agenda (agenda item 1)

Documents: ST/SG/AC.10/C.3/109 (Provisional agenda)
ST/SG/AC.10/C.3/109/Add.1 (List of documents)

Informal documents: INF.1 and INF.2 (List of documents)
INF.12 (Provisional timetable)
INF.32 (Reception by NGOs)

8. The expert from Switzerland withdrew document ST/SG/AC.10/C.3/2019/10 (agenda item 6 (e)) and offered to submit a revised proposal for consideration at the next session.

9. Noting that the consequential amendments proposed in informal document INF.15 (agenda item 8) had already been taken into account in the twenty-first revised edition of the Model Regulations, the representative of IATA withdrew the document.

10. The Sub-Committee adopted the provisional agenda prepared by the secretariat including informal documents (INF.1 to INF.56).

ECOSOC Resolution 2019/7 and status of publications

11. A member of the secretariat informed the Sub-Committee that on 6 June 2019, the Economic and Social Council had considered the report of the Secretary-General on the work of the Committee and its sub-committees during 2017-2018 (document E/2019/63) and had adopted without change the resolution prepared by the Committee at its ninth session (ST/SG/AC.10/46, annex IV). The Resolution will be circulated under the symbol E/RES/2019/7.

12. The Sub-Committee was also informed that the secretariat had already published the English edition of the twenty-first revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations and the eighth revised edition of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Publication of the English and French editions of the seventh revised edition of the Manual of Tests and Criteria is expected to be published before the end of 2019.

IV. Explosives and related matters (agenda item 2)

13. After preliminary consideration in plenary, all questions relating to this agenda item were referred to the Working Group on Explosives, which met from 1 to 4 July 2019 under the chairmanship of Mr. E. de Jong (Netherlands).

14. Items related to explosives in informal document INF.30/Rev.1 were also entrusted to the Explosives Working Group for consideration.

Report of the Working Group on Explosives

Informal document: INF.55 (Chair of the Working Group on Explosives)

15. Having considered the report of the Working Group on Explosives and heard the explanations provided by its Chair, the Sub-Committee noted the conclusions listed below for each subject under consideration under agenda items 2 and 10 (d).

A. Review of Test Series 6

Review of the criteria of Test 6 (d)

Document: ST/SG/AC.10/C.3/2019/11 (SAAMI)

16. The Sub-Committee took note of the outcome of the discussions of the working group as reflected in paragraph 4 of its report in informal document INF.55. It was noted that the expert from SAAMI would lead an Informal Correspondence Group (ICG) to examine the issue further and to develop guidance as to what are to be considered hazardous effects and to refine the 6(d) criteria, if appropriate. In its review, the ICG would not consider the issue of whether an accidental initiation is, in fact, possible. The recommendations of the ICG would then be considered by the Working Group on Explosives and recommendations submitted to the Sub-Committee at a future session.

B. Improvement of Test Series 8

Recommendations on Test Series 8: Applicability of Test Series 8 (d)

Informal document: INF.27 (IME)

17. There was general support by the Working Group on the need to exempt from performance of the 8(d) test those ammonium nitrate emulsions, suspensions and gels that have been subjected to and passed the 8(e) test. The Sub-Committee noted that IME would provide additional data to the Working Group for consideration at a later session.

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

1. Explanatory text about applicable temperature limits in Appendix 6 of the Manual of Tests and Criteria

Document: ST/SG/AC.10/C.3/2019/6 (CEFIC)

18. The proposal was discussed in detail by the Working Group and received several comments. The Sub-Committee noted that CEFIC would consider the comments and develop a new document for consideration at a future session.

2. Aligning the assessment with the purpose of Test Series 4(b)(ii)

Document: ST/SG/AC.10/C.3/2019/12 (SAAMI)

19. While the Working Group agreed that there was a problem with the wording of the 4(b)(ii) test introduction and the acceptance criteria for the test, there was no consensus on the proposal. The Sub-Committee noted that SAAMI would consider to further develop its proposal based on the comments received.

D. “UN” standard detonators

20. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

E. Review of packing instructions for explosives

21. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

F. Application of security provisions to explosives N.O.S

22. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

G. Test N.1 for readily combustible solids

23. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

H. Review of Chapter 2.1 of the GHS

Development of a new Chapter 2.1 for the GHS (explosives)

Document: ST/SG/AC.10/C.3/2019/32 (Sweden)

Informal documents: INF.19 (USA, IME, SAAMI), INF.20 and INF.56 (Sweden)

24. The Sub-Committee noted that the GHS informal group on the review of Chapter 2.1 met jointly with the Working Group on Explosives on 3-4 July 2019. After discussion, both groups had concurred on the outcome as reflected in informal documents INF.55, paragraph 8 and INF.56. The Sub-Committee also noted that both groups had received the status report in ST/SG/AC.10/C.3/2019/32 with background information on the review of Chapter 2.1 for the GHS (explosives), an update on the status of the work, and the program of work as agreed at the end of the previous biennium.

25. The Sub-Committee endorsed the outcome on the classification criteria in 2.1.2 as reflected in paragraph 8 of informal document INF.55. It was also noted that progress would continue in the review and that commitment remained to complete the review within the current biennium.

26. It was also noted that the review of Chapter 2.1 would also be addressed during the thirty-seventh session of the GHS Sub-Committee (see ST/SG/AC.10/C.4/74 paragraphs 16 to 25).

I. Energetic samples

Temperature control of energetic samples

Document: ST/SG/AC.10/C.3/2019/7 (CEFIC)

27. The Sub-Committee noted that the Working Group had supported in principle the proposal on temperature control of energetic samples and that it would resume consideration at a further session based on a new document to be developed by CEFIC with more supporting data and/or examples.

J. Issues related to the definition of explosives

Amendments to the definition of explosive substance and definition of Class 1

Informal documents: INF.10 (Sweden) and INF.35 (SAAMI)

28. While there was no agreement by the Working Group with the proposals, it was acknowledged that there might be some problems with the definitions of “explosive substance” and “Class 1” and that changes may be necessary. However, the issue was deemed too complicated for work within the Working Group due to the limited number of sessions it meets during a biennium. The Sub-Committee noted that the expert from Sweden offered to lead an informal correspondence group to review the matter in detail and to report back to the Working Group with the goal of presenting recommendations at its next meeting.

K. Review of packaging and transport requirements for ANEs

29. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

L. Miscellaneous

1. Clarifications to the regulatory construct of Class 1 compatibility groups, taking into account group S

Document: ST/SG/AC.10/C.3/2019/13 (SAAMI)

30. The Sub-Committee noted that while there was some agreement for the insertion of note encouraging to facilitate 1.4S shipments, the Working Group was unsure whether that note should appear in the Model Regulations or in the Guiding Principles.

31. Upon the request for guidance from the Sub-Committee on where the note should be placed, it was recommended that this should not be seen as a regulatory statement. Based on this recommendation the expert from SAAMI will prepare a revised proposal for a future session of the Working Group taking also into account the comments received.

2. Removing the net explosives mass documentation requirement for Division 1.4

Document: ST/SG/AC.10/C.3/2019/14 (SAAMI)

32. There was not consensus in the Working Group regarding the proposal by SAAMI on removing the net explosives mass documentation requirement for Division 1.4. The Sub-Committee recommended that the concerns raised by SAAMI should be carefully considered at a further session and not only from a scientific perspective.

3. Classification of a pyrotechnic article “Aquaflame”

Informal document: INF.33 (Germany)

33. The Working Group offered several suggestions on to how to handle the classification issue presented in informal document INF.33. The Sub-Committee noted that Germany would consider preparing a new document for future session based on the suggestions.

V. Listing, classification and packing (agenda item 3)

A. Scope of special provision 274

Document: ST/SG/AC.10/C.3/2019/9 (Switzerland)

34. The Sub-Committee confirmed that paragraph 3.1.2.8.1.2 also applied in the case of n.o.s. or generic entries with constituents that are non-dangerous goods and did not find it necessary to clarify the text. The delegations that spoke considered that the current text of paragraph 3.1.2.8.1.2 did not exclude non-hazardous constituents and that having information on these constituents was necessary to assess the hazard presented by these n.o.s. or generic entries. Some delegations considered that not showing the name of the constituents could pose problems in case of controls. The expert from Switzerland might present a revised proposal at a next session.

B. Organic peroxides, new formulations to be listed in 2.5.3.2.4 and portable tank instruction T23

Document: ST/SG/AC.10/C.3/2019/15 (CEFIC)

35. The Sub-Committee adopted the proposals in the document from CEFIC (see annex). Upon a request by the expert from the United States of America, the representative of CEFIC volunteered to share the technical report supporting the proposals with all interested experts.

C. Exemptions for polymerizing substances

Document: ST/SG/AC.10/C.3/2019/18 (CEFIC)

Informal document: INF.6 (CEFIC)

36. Most experts were in favour of developing provisions for exempting some polymerizing substances from the regulations based on the maximum surface temperature, the heat of polymerisation and criteria for packagings. However, they felt that the proposal as drafted needed to be further refined with respect to the assessment method, the authorized packaging and the assignment to P520 or the rationale behind the 200 °C spike temperature, the 50 kg net weight and the 500 J/g limits. It was suggested that the rate of heat transfer from inside to the surface of the package should be considered too. The representative of CEFIC was invited to substantiate their proposal in terms of the suggested modal-based assessment for consideration by the Sub-Committee.

37. In response to the comments received, the representative of CEFIC withdrew the proposal. He invited experts to send him their comments in writing so that he could take them into account and submit a revised proposal for consideration at the next session.

D. Scope of 4.1.2.2

Document: ST/SG/AC.10/C.3/2019/27 (Switzerland)

38. The Sub-Committee could not find a consensus on the proposal. While some delegations considered that the current provisions were clear and fit for purpose, others acknowledged that the text could be improved to address the issue raised by Switzerland and proposed some improvements (e.g. restructuring the text to make the new text only applicable to IBCs for disposal, including non-metallic IBCs).

39. The expert from Switzerland offered to take account the comments received and to consider submitting a revised proposal for a forthcoming session.

E. Carriage of packaging for disposal or recycling

Document: ST/SG/AC.10/C.3/2019/28 (Switzerland)

Informal document: INF.37 (ICCR)

40. The Sub-Committee did not support ST/SG/AC.10/C.3/2019/28 to amend the Model Regulations and preferred a solution on the region levels. Thus, the expert from Switzerland offered to submit a revised proposal for consideration at the RID/ADR/ADN Joint Meeting, if necessary.

41. The Sub-Committee noted some comments and general support on the proposal to modify special provision 374 in informal document INF.37. The expert from ICCR volunteered to submit an official document for consideration at the next session, taking into account the comments received.

F. Special provision 363

Document: ST/SG/AC.10/C.3/2019/29 (Switzerland)

42. Most experts agreed that special provision 363 (j), as drafted, did not preclude the labelling or placarding of engines and machinery containing less than 60 l of liquid fuel. However, most delegations who spoke did not support the proposal in ST/SG/AC.10/C.3/2019/29. Some experts were of the opinion that, in the case of keeping the labelling and placarding of engines and machinery, these vehicles should be accompanied by the appropriate transport document and the text of special provision 363 (l) should? be amended accordingly. To avoid a precedent in the general principles or subsequent interpretation problems, it was suggested not to amend special provisions 363, but to resolve the issue by a note in the report of the session. The Sub-Committee preferred not to amend the Model Regulations and recommended to find a solution on the regional levels. The expert from Switzerland withdrew ST/SG/AC.10/C.3/2019/29.

G. Revision of the Spanish names of the UN numbers

Document: ST/SG/AC.10/C.3/2019/37 (Spain)

Informal document: INF.7 (Spain)

43. The Sub-Committee noted the proposals for the review of the Spanish version of the entries listed in informal document INF.7, as well as the consequential amendments indicated in paragraph 60 of the document. The secretariat was requested to incorporate them in the next revised edition of the Model Regulations (see annex).

H. Transport of transformers with gas cylinders

Document: ST/SG/AC.10/C.3/2019/38 (Germany)

44. The Sub-Committee agreed to pursue the work on this topic but noted that additional issues should still be addressed, such as further specifications on the transport conditions and the signalisation of risk of asphyxiation. Further ventilation requirements should be covered by the different transport modes. The expert from Germany volunteered to prepare a new proposal for consideration at the next session, taking into account the comments received.

I. Request for a new UN number and Packing Group for refined cobalt dihydroxide powder, and to review Class 6.1 and packing groups as currently equated to GHS classification for inhalation toxicity

Informal document: INF.24 (RPMASA, CEFIC, ICPP)

45. The Sub-Committee welcomed the proposal and recommended to consider first the appropriate classification of such substances in its different forms, subject to tests, then to specify the transport conditions and packaging. The expert from RPMASA volunteered to share further data and test reports with all interested delegates and offered an exchange of views during the week on the best way forward. A lunchtime meeting was held to discuss the subject and it was further agreed to follow-up through an intersessional informal correspondence group.

J. Limited and excepted quantities

Informal document: INF.11 (Canada)

46. The Sub-Committee noted the proposal by Canada on inconsistencies in Chapter 3.4 on limited and excepted quantities. Learning about the historical background of these inconsistencies, the Sub-Committee preferred a clarification in the *Guiding Principles for the Development of the UN Model Regulations* to address this issue. Thus, the expert from Canada invited all experts to send her their comments and volunteered to prepare a proposal for consideration at the next session.

K. Environmentally hazardous articles (living organisms)

Informal document: INF.46 (Secretariat of the Convention on Biological Diversity)

47. The Sub-Committee noted the request from the Conference of the Parties to the Convention on Biological Diversity (CBD) to explore the inclusion of environmentally hazardous living organisms into chapter 2.9, class 9 to prevent the introduction of invasive alien species. It was recommended to resume consideration of this subject at the forthcoming session. Experts on biological invasions were invited to join that session and to provide more detailed information on possible risk and hazards.

L. Fire suppression devices that are initiated by an explosive

Informal document: INF.48 (COSTHA)

48. The document received several comments on the appropriate classification of such devices. Following the discussion, the expert from COSTHA thanked for the comments

received and volunteered to bring forward, if necessary, a revised document for consideration at a future session.

VI. Electric storage systems (agenda item 4)

A. Testing of lithium batteries

1. Transport requirements for small, wireless audio headphones, hearing aids, and charging cases

Informal document: INF.18 (MDBTC, PRBA)

49. The Sub-Committee noted some concerns on the scope of the proposal and agreed on the need for further clarifications. The expert from MDBTC volunteered to revise the proposal taking into account the comments received and to submit a new document for consideration at the next session.

2. Lithium battery test summary (TS) document

Informal document: INF.21 and INF.22 (MDBTC)

50. The Sub-Committee endorsed the interpretation as reflected in informal document INF.21. It was agreed that the Test Summary (TS) should be publicly available (e.g. cell/battery manufacturer's website) but it is not mandatory that it should accompany the transport document. Proposal to revise 2.9.4 (g) was not adopted as it was considered that current text was sufficiently clear.

51. The Sub-Committee did not support the proposed text in informal document INF.22 to amend 2.9.4 (g). It was clarified that test summaries are intended for standalone batteries as well as batteries installed in equipment, so information should be provided in all cases.

3. Amendment to 38.3.3 (d) and (g) of the Manual of Tests and Criteria

Document: ST/SG/AC.10/C.3/2019/33 (RECHARGE, PRBA)

Informal document: INF.53 (RECHARGE, PRBA)

52. The Sub-Committee noted general support on the proposal. Some delegations requested additional time to review the revised proposal in informal document INF.53. There was a preference that the new provisions should not be inserted as a note but as a new requirement. The expert from RECHARGE offered to review the proposal in that respect and submit a new official document for consideration at the forthcoming session.

B. Hazard-based system for classification of lithium batteries

1. Work of the informal working group on hazard-based classification of lithium batteries and cells

Document: ST/SG/AC.10/C.3/2019/26 (France)

Informal documents: INF.5 and INF.52 (France)

53. The Sub-Committee noted the information on the meeting of the informal working group on hazard-based classification of lithium batteries and cells, held in Geneva on 5 and 6 December 2018.

54. The expert from France, in his capacity as chair of the informal working group, informed the Sub-Committee on the report of the lunchtime working group on hazard-based classification of lithium batteries and cells held in Geneva on 2 and 3 July 2019. The Sub-Committee endorsed the conclusions and the recommended timetable (paragraphs 6 and 7 in informal document INF.52).

C. Transport provisions

1. Proposal to add state of charge (SOC) provisions to lithium-ion cells and batteries during transportation

Informal document: INF.29 (China)

55. The Sub-Committee welcomed the analysis and test results on lithium ion cells and batteries. It noted a number of comments and the need for further review. The proposal focused on the risks associated with the State of Charge (SOC) of lithium-ion cells and batteries (especially large batteries, such as those used in electric vehicles), which many delegates agreed to get a solution as soon as possible. Meanwhile, under the framework of the informal working group, experts from China were willing to collaborate to study and put forward proposals to systematically address the classification of lithium-ion cells and batteries and associated safety risks for a long-term perspective. This work would support the informal working group's mandates to find a method to assess the reactivity of batteries in general that may also be used to assess the reactivity in relation to the level of charge.

56. It was pointed out that it was not clear if the provisions for the level of charge of batteries currently applied for air transport were relevant to all modes of transport and to all types of batteries. Further discussions at the informal working group should clarify the matter.

57. The expert from China offered to share further data on test results with the informal working group and to actively participate in the discussions. The Sub-Committee invited the experts from China to report the progress on this proposal at the forthcoming session.

2. Lithium battery mark – telephone number for further information

Informal document: INF.34 (ICAO)

58. Following the discussion, the Sub-Committee agreed to examine the current provisions and to identify if the original intent of the phone number has been achieved in other ways. The expert from RECHARGE offered to prepare a proposal for consideration at the next session, including provisions for an appropriate transitional period.

D. Damaged or defective lithium batteries

Document: ST/SG/AC.10/C.3/2019/36 (MDBTC)

59. The Sub-Committee did not support the proposed note to special provision 376 as it requires an additional evaluation and no assessment criteria were indicated. The expert from MDBTC volunteered to refine the document for consideration at the next session.

E. Sodium ion batteries

1. Sodium-ion batteries – additional information

Document: ST/SG/AC.10/C.3/2019/35 (United Kingdom)

Informal document: INF.38 (France)

60. The expert from United Kingdom withdrew ST/SG/AC.10/C.3/2019/35 and preferred going forward with the proposal by France as reflected in informal document INF.38. The Sub-Committee recommended to take a careful approach on this subject and to consider also intrinsic hazards to achieve a proper classification.

61. It was clarified that the aim of the proposal was to create a separate entry for sodium ion batteries and to establish the corresponding transport conditions. The existing entry for sodium metal batteries would not be amended for the time being.

62. It was agreed to resume consideration on the work progress at the forthcoming session based on an informal document jointly prepared by France and United Kingdom. Interested experts on this subject were invited to contact the experts from France and United Kingdom.

F. Miscellaneous

1. UN 3536 “LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT lithium ion batteries or lithium metal batteries”

Document: ST/SG/AC.10/C.3/2019/8 (OTIF)

63. Some delegations agreed that the term "cargo transport unit" as defined in the Model Regulations was not appropriate and that the use of the term needs to be clarified in relation with the scope of UN 3536. Others recalled that similar discussions had already taken place at multiple occasions in the past and that the term had been chosen on purpose. Following the discussion, the Sub-Committee agreed to resume consideration of this subject at its next session based on a new document. Thus, the expert from OTIF was requested to further develop, with the support by PRBA, a proposal on a revised term, special provision 389 and in the view of multimodal transport.

2. Use of packagings not required to meet 4.1.1.3 and exceeding 400 kg net mass for the transport of lithium batteries

Document: ST/SG/AC.10/C.3/2019/34 (PRBA)

64. The Sub-Committee confirmed the interpretation by PRBA that the packagings authorized in (2) and (4) of the packing instruction P903 can have a net mass above 400 kg, as stipulated in the Guiding Principles for packagings. It noted several concerns on the proposed amendments to 4.1.3.3 and the additional notes to packing instructions P903 and LP903. Finally, the expert from PRBA offered to refine his proposal and to transmit a new document for consideration at the next session.

3. Correction and clarifications on Packing Instruction P903

Informal document: INF.25 (PRBA, RECHARGE)

65. Some experts were of the opinion that the proposed text could lead to confusion. The Sub-Committee did not support the proposal and agreed to resume consideration at its next session on the basis of a revised proposal by PRBA/RECHARGE, taking into account the comments received.

4. Correction on Special Provision 377

Informal document: INF.31 (RECHARGE, PRBA)

66. Most experts expressed their preferences for an amendment to SP377 as indicated under the proposed option 1. Noting that option 2 also provided some advantages, the Sub-Committee finally acknowledged that the proposal should be reviewed taking also into account a revision of special provision 310, if necessary. The expert from RECHARGE offered to prepare a new document for consideration at the forthcoming session.

VII. Transport of gases (agenda item 5)

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

67. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

B. Miscellaneous

1. Composite UN pressure receptacles with steel liners

Document: ST/SG/AC.10/C.3/2019/17 (Canada)

68. The Sub-Committee adopted the proposal in the document from Canada (see annex)

2. Provisions for pressure receptacles and their closures

Document: ST/SG/AC.10/C.3/2019/21 (EIGA, CGA, ECMA)

Informal document: INF.3 (EIGA, CGA, ECMA)

69. The Sub-Committee welcomed the proposals and noted several requests for clarifications. Following the discussion, the expert from EIGA expressed his gratitude for the feedback received and invited all experts to send him any further comments. He offered to review the proposals and to submit a revised document for consideration at the forthcoming session.

3. Periodic inspection and test for pressure receptacles

Informal document: INF.36 (France)

70. In the absence of copies of standard ISO 18119:2018, the Sub-Committee was not in the position to support the document by France proposing to amend the reference in note 3 of paragraph 6.2.1.6.1. It was agreed to resume consideration of this subject at the next session, subject to the verification of the corresponding text of the standard concerned to be provided by ISO.

4. Use of a ring on pressure receptacles for engraving periodic inspection marks

Document: ST/SG/AC.10/C.3/2019/31 (EIGA)

Informal document: INF.47 (EIGA)

71. Some experts raised concerns on the possible loss of the ring and the need for fraud prevention. After careful consideration, the Sub-Committee adopted the proposed amendment to 6.2.2.7.8 as reflected in informal document INF.47 (see annex...).

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

A. Marking and labelling

1. Optical differentiation of labels/placards for gases

Document: ST/SG/AC.10/C.3/2019/19 (Spain, CTIF)

72. While several experts endorsed the proposal to amend 5.2.2.2 for labels numbers 2.1 and 2.3 with respect to the symbols used, other experts underlined the need to carefully consider this important issue before taking a decision.

73. While recognizing that emergency response services and safety of the emergency response personnel were of the utmost importance, there was no consensus on the merits of the proposal. Several delegations indicated that there have not been reports of incidents or problems in practice and that the label or placard were not the only way available to communicate hazards. They were therefore reluctant to change a system that was considered to work well. The Sub-Committee was also sensitive to the remarks from government and industry representatives, regarding the impact of implementation of a new label/placard.

74. On the other hand, other delegations saw merit in the proposal, due to the fact that emergency response personnel have not the same level of training or information worldwide and a clear way of distinguishing gases was considered a safety improvement.

75. It was proposed to develop, among others, a cost benefit analysis taking into account all aspects such as training programmes, the impact of time periods for replacement of labels on the different types of receptacles, tanks and containers. The Sub-Committee acknowledged that this solution would be very time consuming and preferred to go in a more pragmatic way. The experts from Spain and CTIF offered to organize a correspondence group to review their proposal and to provide additional justification by an impact assessment in cooperation with the United States delegation and, thus, invited all interested delegates to join that group. The Sub-Committee agreed to resume consideration of the proposal at its next session based on the outcome of the correspondence group.

B. Packaging

1. Information on the flow of dangerous goods

Informal documents: INF.16 (Canada, USA), INF.28 (China) and INF.40 (EU)

76. The Sub-Committee welcomed the presentations by Canada/USA, China and the European Union. It acknowledged that different solutions on the electronic exchange of data were currently developed in the different regions, according to their regional needs. Despite the diverging challenges in the regions (e.g. languages, platforms, extent of information), the Sub-Committee agreed on the need for interregional cooperation and regular exchange of views on common subjects such as data protection and data security. The experts from Canada and USA invited all interested experts to join them for closer collaboration on this subject. The expert from France presented the status within the European Union. He informed the delegates that a similar discussion already took place in the Joint Meeting and that some guidelines on telematics were available in document ECE/TRANS/WP.15/AC.1/2019/44. He recalled that, for the European Union, the work going beyond an experimental project was aimed at developing a regulatory framework.

2. Alternative service equipment, arrangements and methods of inspection and testing of IBCs

Document: ST/SG/AC.10/C.3/2019/5 (Germany)

77. After it was clarified that service equipment was included in the scope of the proposal, the document was adopted as amended (see annex)

3. Permitted period of use for composite IBCs with plastic inner receptacle

Document: ST/SG/AC.10/C.3/2019/24 (Belgium)

78. Most delegates acknowledged that the proposed Note clarified the original intent of 4.1.1.15 and that in the case of composite IBCs, the term receptacle was referring to the inner receptacle. The Sub-Committee adopted the proposal by majority (see annex).

4. Packing group I for liquids packed in metal IBCs

Document: ST/SG/AC.10/C.3/2019/25 (SSCA)

79. Most experts who spoke underlined the need for more data justifying not only the capability of metal IBCs but also on the substances and quantities addressed. It was also stated that further work should be done on the assessment method and criteria of such metal IBCs, taking into account possible hazards and risks. The expert from SSCA volunteered to revise his proposal in this respect and to prepare a new document for consideration at the next session.

5. Packaging performance testing for articles with the potential to produce excessive heat

Document: ST/SG/AC.10/C.3/2019/30 (United Kingdom)

Informal documents: INF.8 and INF.9 (United Kingdom)

80. Most experts welcomed the initiative by the United Kingdom to supplement the existing packaging performance tests in chapters 6.1. and 6.3 with additional tests for articles with the potential to produce excessive heat. It was agreed that some further work has to be done. The expert from RECHARGE offered to share with the United Kingdom information on the ongoing work of SAE standardization group on packagings (G27). The Chair invited

all experts to provide the expert from United Kingdom with their comments and possible data on this subject. Before taking a decision on the best way forward, the Sub-Committee recommended to resume consideration on the basis of more detailed information on packaging types, possible articles, risks and hazards, etc.

6. Rigid packing, intermediate bulk containers (IBCs) and large packaging – Use of recycled plastics material

Informal document: INF.23 (ICPP)

81. The Sub-Committee noted ICPP's intention to propose certain amendments to the Model Regulation provisions as they affect the use of recycle plastic material. All interested delegations were invited to send their comments to the expert from ICPP. It was agreed to have a more detailed exchange of views on this subject at the next session on the basis of a new document.

7. Applicability of packing instruction LP906

Document: ST/SG/AC.10/C.3/2019/23 (RECHARGE, OICA, PRBA, COSTHA)

Informal document: INF.51 (RECHARGE, OICA, PRBA, COSTHA)

82. There was general consent on the need to clarify packing instruction LP906 but the Sub-Committee could not find a common position on the proposed options. Noting that some further amendments were necessary, the Sub-Committee recommended to resume consideration on the basis of a revised document by the authors for consideration at the next session, taking into account the comments received.

8. Proposal of amendments concerning the use of the terms “risk” and “hazard/danger” in the Recommendations and Model Regulations

Document: ST/SG/AC.10/C.3/2019/22 (Romania)

Informal documents: INF.4 (Romania), INF.17, INF.26 (Switzerland) and INF.42 (Canada)

83. The Sub-Committee thanked the experts from Romania and Switzerland for the work done on the topic and invited participants to carefully consider the amendments proposed in the documents with the view of determining which ones could be considered of an editorial nature and therefore be adopted without further consideration.

84. It was pointed out that discussions on this subject were currently taking place at the Joint Meeting and that the outcome of those discussions should be taken into account in a future proposal to amend the Model Regulations.

85. Regarding amendments to the Manual of Tests and Criteria, it was pointed out that a lot of work had already been done on the subject by the working group on explosives and it had been included in the seventh revised edition of the Manual, which should be used as starting point for future work.

86. It was agreed to create a correspondence working group under the leadership of Romania and it was suggested that, to facilitate the work, a few principles should be agreed on (i.e., common understanding of the meaning of “risk” and “hazard” and minimizing the

use of the words risk/hazard/danger in contexts that are not relevant to their specific meaning).

C. Fibre-reinforced plastics (FRP) portable tanks

87. The Sub-Committee entrusted consideration of informal documents INF.13, INF.39 and INF.43 to the informal working group on FRP tanks, which met from 1 to 3 July 2019 under the chairmanship of Mr. Steve Webb (United States of America).

88. The expert from the Russian Federation volunteered to lead an informal working group to work on the proposals in document ST/SG/AC.10/C.3/2019/2 and informal document INF.14. While reiterating their support for the development of provisions for FRP tanks for the transport of gases, the Sub-Committee preferred to concentrate first on the development of provisions for FRP tanks for liquids and solids and to work, in a further step, on the provisions for Class 2. It was noted that the mandate of the informal working group on FRP tanks already covered the possibility of extending the work to other classes. Thus, most experts considered that there was no need to establish an additional working group.

1. Informal working group on fibre-reinforced plastics (FRP) portable tanks

Informal documents: INF.13 (Chair of informal working group on FRP),
INF.14 (Russian Federation), INF.39 (Netherlands),
INF.43 (United Kingdom) and
INF.54 (Chair of informal working group on FRP)

89. The Sub-Committee took note of the work progress by the group during its meeting from 1 to 3 July 2019. It endorsed the recommendations of the informal working group in informal document INF.54. In particular:

- (a) it acknowledged the outcome on new provisions to ensure an equivalent level of safety between metal and FRP portable tanks and various other issues (addressed by informal documents INF.39 and INF.43), as summarized in paragraphs 2 to 6 of informal document INF.54;
- (b) it endorsed the recommendation to continue work on this matter during the period 2019-2020 and the actions requested to organize future meetings of the informal working group as requested in paragraph 10 of informal document INF.54.

90. The Sub-Committee noted the amendments proposed by the Russian Federation in informal document INF.14 to insert in the Model Regulations a new chapter 6.9.3 on requirements for the structure, manufacturing, inspection and testing of portable tanks with polymeric composite materials vessel intended for the carriage of non-refrigerated liquefied gas of maximum permissible working pressure 20.0 bar and less. The Sub-Committee requested the informal working group on FRP to consider this proposal in a future step.

D. Portable tanks (other than FRP)

1. Inclusion of the new section 6.9.4 “Requirements for design, construction, inspection and testing of fibre reinforced plastic (FRP) valves, relief devices and manholes for portable tanks”

Document: ST/SG/AC.10/C.3/2019/2 (Russian Federation)

91. The Sub-Committee noted the proposal and referred the document to the informal working group on FRP for consideration together with INF.14 (see paragraph [64] above). The Sub-Committee requested the informal working group on FRP to also consider this proposal in a future step.

E. Other miscellaneous proposals

1. Increase of the maximum allowed internal pressure for aerosol dispensers

Document: ST/SG/AC.10/C.3/2019/3 (FEA, HCPA)

92. The document received several comments on construction parameters of aerosol dispensers and concerns on their transport at higher temperatures. The Sub-Committee noted general support on option 2 in the document but considered it premature to adopt the proposed amendments. It agreed to resume consideration of the proposal on the basis of more detailed information.

2. Harmonisation of the requirement “structurally serviceable”

Document: ST/SG/AC.10/C.3/2019/4 (Germany, CEFIC)

93. Most experts did support the proposed amendments, some others raised concerns. The expert from Germany underlined that the proposal reflected the current situation of practice for the transport of dangerous goods in all cargo transport units. The Sub-Committee did not fully support the proposed amendments and agreed to resume consideration at its forthcoming session based on a revised document.

3. Modification to the definition of a large packaging

Document: ST/SG/AC.10/C.3/2019/16 (Canada)

Informal document: INF.45 (United Kingdom)

94. The Sub-Committee noted some comments on the proposed amendments to the definition of a large packaging in 1.2.1. The expert from the United Kingdom suggested further amendments as reflected in informal document INF.45. Some experts raised a study reservation due to the late submission of informal document INF.45. The expert from Canada proposed to work with the expert from the United Kingdom to come back with a revised proposal for the next session.

IX. Global harmonization of transport of dangerous goods regulations with the Model Regulations (agenda item 7)

1. Harmonization of RID/ADR/ADN with the 21st revised edition of the United Nations Recommendations on the Transport of Dangerous Goods, Model Regulations

Informal document: INF.30/Rev.1 (Secretariat)

95. The Sub-Committee was not able to make decisions on an informal document and requested the secretariat to submit a working document at the next session.

2. Information on recommendations made by the ICAO Dangerous Goods Panel

Informal document: INF.41 (ICAO)

96. As there were some concerns regarding possible divergence among the different modes, ICAO was invited to present a working document at the next session to give the Sub-Committee the opportunity to carefully consider the proposals.

3. Outcome of the thirty-first session of the Editorial and Technical Group (the IMDG Code)

Informal document: INF.49 (IMO)

97. It was noted that some of the editorial issues brought to the attention of the Sub-Committee, were already included in the twenty-first revision of the Model Regulations. The Sub-Committee took note of additional information regarding mode specific provisions for data loggers and transport document in paragraphs 3.13 and 3.45 of informal document INF.49 respectively.

98. The Sub-Committee invited IMO to submit a working document at the next session if there were any remaining issues that needed to be addressed.

X. Cooperation with the International Atomic Energy Agency (agenda item 8)

99. The representative of IATA withdrew informal document INF.15 (see para 9).

XI. Guiding principles for the Model Regulations (agenda item 9)

100. As no document had been submitted under this agenda item, no discussion took place on this subject.

XII. Issues relating to the Globally Harmonized System of Classification and Labelling of Chemicals (agenda item 10)**A. Testing of oxidizing substances****1. Tests for oxidizing liquids and oxidizing solids improvement regarding consideration for particle size, friable or coated materials**

Document: ST/SG/AC.10/C.3/2019/20 (France)

Informal document: INF.44 (France)

101. The Sub-Committee noted the information provided on the document and thanked the expert from France for undertaking work on this topic in accordance with the programme of work for 2019-2020.

102. The expert from France clarified that the purpose of the work in item 4(b) was not to modify existing classification criteria for coated materials. He explained that a coating could provide extra protection that could modify oxidizing properties but on the opposite friability

could affect the efficiency of coating and influence the test results. Therefore, it was important to clarify how to deal with this type of materials.

B. Chemicals under pressure

103. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

C. Updating of references to OECD Guidelines

Document: ST/SG/AC.10/C.3/2019/1 (European Union)

104. The Sub-Committee consider the proposal in document ST/SG/AC.10/C.3/2019/1 from the European Union on the revision of paragraph 2.8.3.2 and adopted it as reproduced in the annex.

D. Review of Chapter 2.1

105. Document ST/SG/AC.10/C.3/2019/32 and informal documents INF.19 and INF.20 on the development of a new chapter 2.1 for GHS were discussed under agenda item 2 (h) (see paragraphs 24 to 26).

E. Simultaneous classification in physical hazards and precedence of hazards

106. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

F. Miscellaneous

107. As no document had been submitted under this agenda sub-item, no discussion took place on this subject.

XIII. Other business (agenda item 11)

Tribute to Mr. Haidl and Mr. Kirchnawy (Austria)

108. The Sub-Committee noted that Mr. Friedrich Kirchnawy had retired in May 2019 and will no longer attend the sessions of the Sub-Committee as head of the Austrian delegation. Learning that Mr. Ewald HAIDL (Austria) would also no longer attend the sessions, the Sub-Committee expressed its appreciation for their contributions to the work of the Sub-Committee and wished them a long and happy retirement.

XIV. Adoption of the report (agenda item 12)

109. The Sub-Committee adopted the report on its fifty-fifth session and its annex on the basis of a draft prepared by the secretariat.

Annex

[Original: English and French]

Adopted texts

I. Draft amendments to the twenty-first revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations (ST/SG/AC.10/1/Rev.21)

Chapter 2.5

2.5.3.2.4 In the table, add the following new entry for “ACETYL ACETONE PEROXIDE”:

"	≤ 35	≥ 57			≥ 8	OP8			3107	32)
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In the list of “Notes on 2.5.3.2.4” add the following entry:

“32) Active oxygen ≤ 4.15 %”

(Reference document: ST/SG/AC.10/C.3/2019/15)

Chapter 2.8

2.8.3.2 In the second sentence, replace “OECD Test Guidelines^{1,2,3,4}” by “OECD Test Guidelines Nos. 404¹, 435², 431³ or 430⁴”. In the third sentence, replace “OECD Test Guidelines^{1,2,3,4}” by “one of these or non-classified in accordance with OECD Test Guideline No. 439⁵”. In the fourth sentence, delete “*in vitro*”. At the end, add the following new sentence: “If the test results indicate that the substance or mixture is corrosive, but the test method does not allow discrimination between packing groups, it shall be assigned to packing group I if no further tests indicate a different result.”.

Add a footnote 5 to read “⁵ OECD Guideline for the testing of chemicals No. 439 “*In Vitro Skin Irritation: Reconstructed Human Epidermis Test Method*” 2015”.

(Reference document: ST/SG/AC.10/C.3/2019/1, proposal 1, as amended)

Chapter 4.1

4.1.1.15 Add a note at the end to read as follows:

“**NOTE:** for composite IBCs the period of use refers to the date of manufacture of the inner receptacle.”

(Reference document: ST/SG/AC.10/C.3/2019/24)

4.1.4.1, P200 In (5), special packing provision “d”, after “steel pressure receptacles”, insert “or composite pressure receptacles with steel liners”.

(Reference document: ST/SG/AC.10/C.3/2019/17)

Chapter 4.2

4.2.5.2.6, T23 For UN No. 3109 “ORGANIC PEROXIDE, TYPE F, LIQUID” add “tert-Butyl hydroperoxide, not more than 56% in diluent type B^b” under the column “substance”.

Add a new note “b” under the table to read “^b Diluent type B is tert-Butyl alcohol” and renumber existing table notes “b” to “d” to become “c” to “e”.

(Reference document: ST/SG/AC.10/C.3/2019/15)

Chapter 6.2

6.2.2.7.8 Amend to read as follows:

“6.2.2.7.8 The marks in accordance with 6.2.2.7.7 may be engraved on a metallic ring affixed to the cylinder or pressure drum when the valve is installed, and which is removable only by disconnecting the valve from the cylinder or pressure drum.”

(Reference document: ST/SG/AC.10/C.3/2019/31, as amended by informal document INF.47)

Chapter 6.5

6.5.1.1.2 Amend to read as follows:

“6.5.1.1.2 The requirements for IBCs in 6.5.3 are based on IBCs currently used. In order to take into account progress in science and technology, there is no objection to the use of IBCs having specifications different from those in 6.5.3 and 6.5.5, provided that they are equally effective, acceptable to the competent authority and able successfully [to withstand the tests] described in 6.5.4 and 6.5.6. Methods of inspection and testing other than those described in these Regulations are acceptable, provided they are equivalent.”

(Reference document: ST/SG/AC.10/C.3/2019/5, as amended)

Document ST/SG/AC.10/C.3/2019/37 and informal document INF.7, containing only amendments to the Spanish version, were adopted.
