



**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-seventh session**

held in Geneva from 30 November to 8 December 2020

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Annexes

- 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)¹
- II. Draft amendments to the seventh revised edition of the Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.7)¹
- III. Corrections to the twenty-first revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations (ST/SG/AC.10/1/Rev.21)¹

¹ For practical reasons, this annex has been published as an addendum with the symbol ST/SG/AC.10/C.3/114/Add.1.

I. Attendance

1. The Sub-Committee of Experts on the Transport of Dangerous Goods held its fifty-seventh session from 30 November to 8 December 2020, 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, Mexico, the Netherlands, Norway, Poland, Republic of Korea, Romania, 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 Latvia, Luxembourg, Romania, 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); Compressed Gas Association (CGA); 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 Association for Advanced Rechargeable Batteries (RECHARGE); 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 Intermediate Bulk Container Associations (ICIBCA); International Confederation of Plastics Packaging Manufacturers (ICPP); International Fibre Drum Institute (IFDI); International Organization for Standardization (ISO); International Vessel Operators Dangerous Goods Association (IVODGA); KiloFarad International (KFI); Medical Device Battery Transport Council (MDBTC); Rechargeable Battery Association (PRBA); Responsible Packaging Management Association of Southern Africa (RPMASA); Sporting Arms and Ammunition Manufacturers' Institute (SAAMI), World Coatings Council; and World LPG Association (WLPGA).

Organizational matters

7. The fifty-seventh session of the ECOSOC Sub-Committee of Experts on the Transport of Dangerous Goods (TDG) was initially scheduled to be held from 29 June to 8 July 2020. Due to the coronavirus (COVID-19) pandemic and the measures implemented by the United Nations Economic Commission for Europe (UNECE) and the United Nations member states to protect public health, such as travel restrictions, the session was postponed to 30 November to 8 December 2020, in place of the fifty-eighth session. In addition, owing to a combination of COVID-19 response measures, financial constraints triggered by the United Nations liquidity crisis, ongoing renovation work at the Palais des Nations under the strategic heritage plan and technical constraints related to the limited number of meeting rooms available for hybrid meetings, the share of meetings with interpretation allocated to UNECE was limited to only one per day for the last quarter of 2020.
8. Taking into account those factors, the quarantine and travel restrictions in force, and after consultation with the secretariat and conference services of the United Nations Office at Geneva (UNOG), the chairs of the Sub-Committee decided to adapt the format of the fifty-seventh session. Following consultations with the bureau, the secretariat set up an online platform to exchange written comments on the proposals that were initially submitted for

discussion at the June-July 2020 session. Several informal virtual discussions were also held to clarify and help progress proposals following the comments received in writing through the online written platform. Since these were considered informal sessions, no decisions were taken. These arrangements were highly appreciated by delegations as they allowed the Sub-Committee to make progress on its work program in preparation of the November-December session.

9. The November-December session was the last session of the current biennium (2019-2020) and the Sub-Committee was expected to complete the work on the items included on its programme of work for that period. It was therefore of the utmost importance that the bureau organised the December session in a format allowing the Sub-Committee to take formal decisions.

10. The Sub-Committee acknowledged the efforts by the secretariat for having again set up an online platform for the exchange of comments in writing on all items on the agenda for the November-December session. Thus, delegations had been in the position to indicate whether their proposals were ready to seek the support of the Sub-Committee to adopt the amendments as drafted or whether additional amendments were needed before it can be considered for adoption. At the end of the commenting period on the session documents on the platform, the authors of the proposals that have not been identified as ready for adoption informed the secretariat on whether additional time was needed to further discuss them during the informal sessions held in the mornings (in English only) from 30 November to 8 December or whether they decide to continue the work during the next biennium. In this respect, the Chair of the Sub-Committee set up a running order for the discussion during the informal meetings taking into account the comments received from the authors of the documents.

II. Adoption of the agenda (agenda item 1)

Documents: ST/SG/AC.10/C.3/113/Rev.1 (Provisional agenda)
ST/SG/AC.10/C.3/113/Rev.1/Add.1 (List of documents and annotations)

Informal documents: INF.1 and INF.2 (List of documents)
INF.28 (Working arrangements)
INF.44 (Provisional timetable)

11. The Sub-Committee adopted the provisional agenda prepared by the secretariat after amending it to take account of informal documents INF.1 to INF.64.

III. Recommendations made by the Sub-Committee at its fifty-fifth and fifty-sixth sessions and pending issues (agenda item 2)

A. Review of draft amendments already adopted during the biennium

Document: ST/SG/AC.10/C.3/2020/59 (Secretariat)

12. The Sub-Committee confirmed the amendments to the Model Regulations and the Manual of Tests and Criteria in document ST/SG/AC.10/C.3/2020/59, including those between square brackets, with an additional amendment to 5.2.1.7.1 and 5.2.1.7.2 (a) (see annexes I and II).

B. Explosives and related matters

13. Due to the unavailability of Mr. Ed de Jong (The Netherlands), Mr. D. Pfund (United States of America) presented, as acting chair of the Working Group on Explosives, the outcome of the virtual meeting of the group held on 17 and 18 November 2020. Having

considered the report of the Working Group, the Sub-Committee noted the conclusions listed in sections 1 to 12 below.

1. Review of test series 6

Document: ST/SG/AC.10/C.3/2020/4 (SAAMI)

Informal document: INF.38 (Chair of the Working Group on Explosives)

14. The Sub-Committee noted that the Working Group had decided to defer the review of test series 6 to the next biennium.

2. Improvement of Test Series 8

Informal document: INF.13 (IME)

15. The Sub-Committee noted that IME had agreed to prepare an official proposal for consideration in the next biennium.

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

Document: ST/SG/AC.10/C.3/2020/3 (Chair of the Working Group on Explosives)

Informal document: INF.38 (Chair of the Working Group on Explosives)

16. The Sub-Committee adopted the amendments to Chapter 28 of the Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.7) proposed in Annex 3, Amendment 1 of informal document INF.38 (see annex II).

4. “UN” standard detonators

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

5. Review of packing instructions for explosives

Documents: ST/SG/AC.10/C.3/2020/51 (United Kingdom)

ST/SG/AC.10/C.3/2020/53 (United Kingdom)

Informal document: INF.38 (Chair of the Working Group on Explosives)

18. The Sub-Committee adopted the amendments to packing instruction P137 of the Model Regulations proposed in Annex 2, Amendment 1 of informal document INF.38 (see annex I to this report).

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

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

7. Test N.1 for readily combustible solids

Document: ST/SG/AC.10/C.3/2020/34 (China)

Informal document: INF.38 (Chair of the Working Group on Explosives)

20. The Sub-Committee adopted the amendments to Section 33.2.4.2 and to Figure 33.2.4.1 (A) in Section 33.2.4 of the Manual of Tests and Criteria proposed in Annex 3, Amendments 2 and 3 of informal document INF.38 (see annex II to this report).

8. Review of Chapter 2.1 of the GHS

21. The Sub-Committee reviewed this subject under agenda item 11 (see paras. 106-112).

9. Energetic samples

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

10. Issues related to the definition of explosives

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

11. Review of packaging and transport requirements for ANEs

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

12. Miscellaneous

- (a) Inconsistency in the French description of the UN gap test in the Manual of Tests and Criteria

Document: ST/SG/AC.10/C.3/2020/17 (Secretariat)

25. The Sub-Committee adopted the proposal in ST/SG/AC.10/C.3/2020/17 to align the French version of 11.4.1.2.1 of the Manual of Test and Criteria (see annex III).

- (b) Terms of Reference for the work on “Exclusion from Class 1” within the Explosives Working Group

Document: ST/SG/AC.10/C.3/2020/25 (France, COSTHA)

26. It was agreed to defer consideration of ST/SG/AC.10/C.3/2020/25 to the next biennium.

- (c) New entry for aerosol generating, fire suppression devices

Informal document: INF.6 (COSTHA)

27. It was agreed to defer consideration of this subject to the next biennium.

IV. Listing, classification and packing (agenda item 3)**A. Clarification of control and emergency temperatures for formulations listed in packing instruction IBC520 and portable tank instruction T23**

Document: ST/SG/AC.10/C.3/2020/6 (Republic of Korea, Cefic)

28. The Sub-Committee adopted the amendments to 2.4.2.3.2.3, 2.5.3.2.4, IBC520 of 4.1.4.2 and T23 of 4.2.5.2.6 (see annex I).

B. Toxicity of UN 2248, 2264 and 2357

Document: ST/SG/AC.10/C.3/2020/7/Rev.1 (Republic of Korea)

29. Opinions differed on the suitability of the proposed amendments to UN 2248, 2264 and 2357. Several experts felt that further data and discussion are needed. In view of the comments received, the expert from the Republic of Korea withdrew the proposal and said that he would work with other delegations and come back with a revised proposal during the next biennium.

C. Clarification of the scope of UN 1002 AIR, COMPRESSED

Document: ST/SG/AC.10/C.3/2020/9 (EIGA)

Informal document: INF.35 (EIGA)

30. The Sub-Committee adopted the amendments proposed in ST/SG/AC.10/C.3/2020/9 (see annex I).

D. Transport of portable fire extinguishers in accordance with special provision 225

Document: ST/SG/AC.10/C.3/2020/10/Rev.1 (Germany)

31. The Sub-Committee adopted the amendments in ST/SG/AC.10/C.3/2020/10/Rev.1 and agreed to remove in the proposed note of special provision 225 the word "marked" and to keep "identified" (see annex I).

E. Introduction of a new entry for (7-Methoxy-5-methyl-benzothiophen-2-yl) boronic acid as a self-reactive substance in 2.4.2.3.2.3 of the Model Regulations

Document: ST/SG/AC.10/C.3/2020/12 (Cefic)

32. The Sub-Committee adopted the amendments proposed in ST/SG/AC.10/C.3/2020/12 (see annex I).

F. Organic peroxides: new formulations to be listed in 2.5.3.2.4

Document: ST/SG/AC.10/C.3/2020/14 (Japan)

33. The Sub-Committee adopted the two new entries in the list of organic peroxides under 2.5.3.2.4 (see annex I).

G. Consequential amendments related to the introduction of "TEMPERATURE CONTROLLED" in 3.1.2.6 and reference to "MOLTEN" as part of the proper shipping name in the transport document

Documents: ST/SG/AC.10/C.3/2020/15 and ST/SG/AC.10/C.3/2020/68 (Spain)

34. Following the comments received during the informal session, the expert from Spain withdrew document ST/SG/AC.10/C.3/2020/68. The Sub-Committee adopted the amendments in ST/SG/AC.10/C.3/2020/15 with the additional deletion in the proposed amendments to 7.1.5.3.2 (a) of the words "STABILIZED or" (see annex I).

H. Modifications concerning salvage pressure receptacles

Document: ST/SG/AC.10/C.3/2020/18 (Germany)

Informal documents: INF.52 (ECMA)
INF.53 (Germany)

35. Following the comments received during the informal session on informal documents INF.52 and INF.53, the Sub-Committee adopted the amendments under proposal 3 in ST/SG/AC.10/C.3/2020/18 (see annex I). It was agreed to set up an intersessional working group led by Germany to further discuss proposals 1 and 2, and to submit a new proposal for consideration during the next biennium.

I. Request for a new UN number for cobalt dihydroxide powder

Document: ST/SG/AC.10/C.3/2020/21/Rev.1 (RPMASA, ICPP)

Informal documents: INF.5, INF.20 and INF.45 (RPMASA, ICPP)

36. The Sub-Committee considered ST/SG/AC.10/C.3/2020/21/Rev.1 and adopted the revised amendments in paragraphs 13, 17 and 18 as reflected in informal document INF.45 with some additional amendments (see annex I).

37. The Sub-Committee invited the authors to work further on testing provisions for flexible IBCs in Chapter 6.5 and on a revised proposal for amendments to the Guiding Principles.

J. Amendments to P621

Document: ST/SG/AC.10/C.3/2020/24/Rev.1 (Belgium)

38. The Sub-Committee adopted the proposed amendments to packing instruction P621 (see annex I).

K. Amendment to classification of toxins extracted from living sources

Document: ST/SG/AC.10/C.3/2020/31 (China)

39. The Sub-Committee adopted the amended note under the heading of Chapter 2.6 (see annex I).

L. Amendments to excepted quantities of UN 3208

Document: ST/SG/AC.10/C.3/2020/32 (China)

40. The Sub-Committee adopted the amendment to the Dangerous Goods List in Chapter 3.2 (see annex I).

M. Comments on ST/SG/AC.10/C.3/2020/32

Document: ST/SG/AC.10/C.3/2020/78 (ICAO)

41. The Sub-Committee adopted the amendment to UN 3208 and UN 3209 in the Dangerous Goods List in Chapter 3.2 (see annex I).

N. Updating standard reference

Document: ST/SG/AC.10/C.3/2020/50 (United Kingdom)

42. The Sub-Committee adopted the updated the references to standard ISO 16106:2020 (see annex I).

O. Special provision for UN 1013, Carbon Dioxide

Document: ST/SG/AC.10/C.3/2020/54 (COSTHA)

43. The representative of COSTHA withdrew the proposal.

P. Clarification of the scope of special provision 354

Document: ST/SG/AC.10/C.3/2020/61 (The Netherlands)

44. Following the comments received, the expert from the Netherlands withdrew the document and announced that she would consider submitting a revised proposal for the next biennium. Delegates were invited to send their written comments to the expert from the Netherlands.

Q. Classification of UN 1891 ETHYL BROMIDE

Document: ST/SG/AC.10/C.3/2020/72 (Belgium)

Informal documents: INF.21, INF.22 and INF.62 (Belgium)

45. The Sub-Committee noted the information in informal document INF.62 and adopted the amendment to UN 1891 in the Dangerous Goods List (see annex I).

R. Amendment of SP142

Informal document: INF.8 (China)

46. It was agreed to defer consideration of the informal document to the next biennium.

S. UN 2189 – Correction to P200

Informal document: INF.18 (EIGA)

47. It was agreed to defer consideration of the informal document to the next biennium.

T. Revisions to special provision 301

Document: ST/SG/AC.10/C.3/2020/41 (IATA)

Informal document: INF.58 (IATA)

48. The Sub-Committee endorsed the proposal in principle but recommended to defer consideration of this subject to the next biennium. The expert from IATA volunteered to submit a revised proposal for the next session based on the comments received.

U. Proposal to amend special provision 396 as adopted at the fifty-sixth session

Document: ST/SG/AC.10/C.3/2020/49 (United Kingdom)

Informal document: INF.54 (United Kingdom)

49. Following the discussion on the transport of transformers with gas cylinders, the Sub-Committee did not support the proposed amendments. The expert from the United Kingdom withdrew the document and volunteered to submit a new proposal for the next session, taking into account the comments received.

V. Electric storage systems (agenda item 4)

A. Testing of lithium batteries

1. Applicability of packing instruction LP906, and clarification of packing instruction P911

Document: ST/SG/AC.10/C.3/2020/29 (RECHARGE, OICA, PRBA, COSTHA)

Informal document: INF.12 (RECHARGE, OICA, PRBA, COSTHA)

50. The Sub-Committee adopted the amendments proposed in document ST/SG/AC.10/C.3/2020/29 as amended in informal document INF.12 with some additional amendments (see annex I).

2. Lithium battery test summary

Documents: ST/SG/AC.10/C.3/2020/47 and ST/SG/AC.10/C.3/2020/77 (MDBTC, DGAC, PRBA, COSTHA, RECHARGE, SAAMI, DGTA)

51. The Sub-Committee adopted by majority only the amendments related to button cells when installed in equipment (including circuit boards) and the validation of the test summary (signature) in document ST/SG/AC.10/C.3/2020/77 with an additional amendment (see annex I).

52. The Sub-Committee confirmed that type testing requirements apply for button cell designs. Furthermore, it confirmed that the test summary should be publicly available (e.g. cell/battery manufacture's website) but it is not mandatory that it should accompany the transport document.

B. Hazard-based system for classification of lithium batteries

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

C. Transport provisions

1. Revision to Chapter 2.9.4 to separate the quality management system from classification requirements

Document: ST/SG/AC.10/C.3/2020/40 (IATA)

54. Although the Sub-Committee agreed that it is not compulsory to add a copy of the quality management programme to the transport documents, the approach taken in the proposal to clarify the issue did not gain full support. Some delegations suggested that a simpler approach, for instance, by the addition of a Note, would be more appropriate.

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

Documents: ST/SG/AC.10/C.3/2020/46 and ST/SG/AC.10/C.3/2020/75 (PRBA, RECHARGE)

55. The Sub-Committee adopted by majority the amendments proposed in ST/SG/AC.10/C.3/2020/75 together with additional amendments to 4.1.3.3 (see annex I).

3. Phone number on lithium battery mark

Documents: ST/SG/AC.10/C.3/2020/48 and ST/SG/AC.10/C.3/2020/76 (PRBA, RECHARGE)

56. The Sub-Committee adopted the amendments proposed in document ST/SG/AC.10/C.3/2020/76 (see annex I). It was noted that, if needed, there would be time in the next two bienniums to modify the contents of the transitional period note.

4. Proposed amendment to packing instruction LP903

Document: ST/SG/AC.10/C.3/2020/52 (United Kingdom)

Informal document: INF.34 (PRBA)

57. Some experts felt it premature to adopt the proposed amendments to packing instruction LP903 and preferred to resume consideration during the next biennium.

5. Inner packagings for lithium cells and batteries – Clarification of requirements in Packing Instruction P903

Document: ST/SG/AC.10/C.3/2020/56/Rev.1 (United States of America)

58. It was agreed to defer the discussion of this subject to the next biennium.

D. Damaged or defective lithium batteries

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

E. Sodium-ion batteries**1. Sodium-ion batteries – creation of a dedicated UN number and related special provisions**

Document: ST/SG/AC.10/C.3/2020/45/Rev.1 (France and United Kingdom)

Informal documents: INF.9 and INF.50 (France and United Kingdom)
INF.39 (France)

60. The Sub-Committee welcomed the updated information in informal document INF.50 on a set of proposals allowing to introduce new provisions on sodium-ion batteries with all consequential amendments to both the Model Regulations and the Manual of Tests and Criteria. Many delegations supported the principle of treating sodium-ion batteries in a similar way to lithium-ion batteries. Some experts felt it premature to adopt the proposals at this time. Following the discussion, it was agreed to defer the discussion on this subject to the next biennium.

61. As a possible way forward, the expert from France invited competent authorities to consider in the meantime exemptions based on multilateral agreements and collecting further data on the transport of sodium-ion batteries.

2. Low energy density sodium-ion battery testing

Document: ST/SG/AC.10/C.3/2020/65 (KFI)

62. The Sub-Committee noted the position of KFI that the low energy density sodium-ion cells do not pose safety risks that justifies regulation as a dangerous good. It was recommended to defer consideration of this subject to the next biennium and to share additional information on related tests and studies.

F. Miscellaneous

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

VI. Transport of gases (agenda item 5)

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

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

B. Miscellaneous

1. Update of LC₅₀ values in P200

Document: ST/SG/AC.10/C.3/2020/8 (EIGA)

Informal documents: INF.40 (EIGA)
INF.41 (DGAC)

65. The representative of EIGA withdrew the amendments to UN 1005 AMMONIA, ANHYDROUS proposed in document ST/SG/AC.10/C.3/2020/8. The Sub-Committee considered and adopted the remaining amendments to table 2 of P200 for gases under UN Nos. 1008, 2196, 2198 and 1052 together with the consequential amendments proposed in informal document INF.41 to UN Nos. 2196 and 2198 (see annex I).

2. Gas mixtures containing fluorine (UN 1045)

Document: ST/SG/AC.10/C.3/2020/19/Rev.1 (Germany)

Informal document: INF.29 (Germany)

66. The Sub-Committee adopted the amendment to packing instruction P200 on UN 1045 (see annex I).

3. Updated ISO standards in Class 2

Document: ST/SG/AC.10/C.3/2020/13 (ISO)

Informal documents: INF.31/Rev.1, INF.46 and INF.57 (ISO)

67. The Sub-Committee adopted the amendments to update the references to ISO standards proposed in document ST/SG/AC.10/C.3/2020/13 as amended in informal document INF.57 (see annex I). On proposal 2, one delegation noted concern over the movement of the bend test from a batch test to a prototype test. No objection was raised to adopt the proposal, but it was agreed that work continue on this topic.

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

A. Marking and labelling

Optical differentiation of labels/placards for gases

Document: ST/SG/AC.10/C.3/2020/39/Rev.1 (Spain, CTIF)

Informal document: INF.10 (WLPGA, LGE)

68. The representative of CTIF gave a presentation on the need of optical differentiation of placards or labels for gases, describing the proposed amendments in document ST/SG/AC.10/C.3/2020/39/Rev.1. The Sub-Committee acknowledged the importance of the hazard communication system to response personnel but the proposal as drafted did not gain full support. Some delegations were of the opinion that such hazard communication issues were best addressed in regional or modal regulations, as it is currently done for RID with the orange band for liquefied gases.

B. Packagings

1. Alternative methods of testing of packagings – Consequential amendments resulting from ST/SG/AC.10/C.3/112, para. 80 and Annex I

Document: ST/SG/AC.10/C.3/2020/28/Rev.1 (Belgium, Germany)

Informal document: INF.19 (Belgium, Germany)

69. The Sub-Committee adopted the proposed amendments on alternative methods of testing of packagings in document ST/SG/AC.10/C.3/2020/28/Rev.1 (see annex I). It was recommended to defer the discussion of informal document INF.19 on the review of definitions of "Reused packaging" and "Reused large packaging" to the next biennium.

2. Supplement for drop orientations in the drop test of box packaging

Document: ST/SG/AC.10/C.3/2020/36 (China)

70. It was recommended to defer consideration of this subject to the next biennium. The expert from China volunteered to submit a revised proposal for the next session taking into account the written comments received from some delegations through the online platform. Other delegations were invited to transmit their comments to the expert from China.

3. Increase a water temperature adjustment factor for the hydraulic test

Document: ST/SG/AC.10/C.3/2020/37 (China)

71. It was again recommended to defer consideration of this subject to the next biennium. The expert from China would submit a revised proposal taking into account the written comments received.

4. Extending the use of recycled plastics material to all plastics packagings, plastics IBCs and plastics large packagings

Document: ST/SG/AC.10/C.3/2020/44/Rev.1 (Belgium)

Informal document: INF.47 (Belgium)

72. Sub-Committee adopted proposal 1 and the amendment to the Note in proposal 6 in informal document INF.47 with some additional amendments (see annex I).

73. The Sub-Committee agreed that where the term "suitable plastics material" is used within the Model Regulations, the use of recycled plastics material is not prohibited. It was also agreed to look more closely in the next biennium at the scope of the term "suitable plastics material" and the relevant provisions in part 6 and in the definition of recycled plastics material in 1.2.1.

5. Definition of recycled plastics material

Document: ST/SG/AC.10/C.3/2020/42 (ICPP, ICCR)

74. It was recommended to defer the discussion on the definition of recycled plastics material to the next biennium (see paragraph 73 above).

6. Diameter of cylindrical steel rod during puncture test according to 6.3.5.4*Informal document:* INF.7 (Germany)

75. It was agreed to defer the discussion of this subject to the next biennium.

7. Stacking test according to 6.1.5.6*Informal document:* INF.11 (Turkey)

76. It was agreed to defer the discussion of this subject to the next biennium.

8. Multiwall water resistant paper bags (5M2)*Informal document:* INF.32 (Turkey)

77. It was agreed to defer the discussion of this subject to the next biennium.

9. Scope of 4G packaging and the translation of the Chinese version*Document:* ST/SG/AC.10/C.3/2020/35 (China)

78. In response to the question by the expert from China in document ST/SG/AC.10/C.3/2020/35, the Sub-Committee clarified that fibreboard boxes in 6.1.4.12 in the Model Regulations include "corrugated fibreboard boxes".

C. Fibre-reinforced plastics (FRP) portable tanks**Working group on FRP portable tanks***Document:* ST/SG/AC.10/C.3/2020/57/Rev.1 (Chair of the Working Group)*Informal documents:* INF.43 (Chair of the Working Group)

INF.48 (The Netherlands)

INF.49 (United Kingdom)

INF.55 (Russian Federation)

INF.60 (Germany)

INF.61 (AEISG)

79. The Sub-Committee noted some concerns raised in informal documents INF.48 and INF.49. Following the discussion during which some related concerns were raised, the Sub-Committee adopted by majority the amendments to the Model Regulations on FRP portable tanks proposed in document ST/SG/AC.10/C.3/2020/57/Rev.1 as amended in informal document INF.43 (see annex I).

D. Portable tanks (other than FRP)**Impact testing of portable tanks and MEGCs: proposal to revise Section 41 of the Manual of Tests and Criteria***Document:* ST/SG/AC.10/C.3/2020/5 and Add.1 (Canada)

80. The Sub-Committee adopted the amendments proposed to revise section 41 of the Manual of Tests and Criteria (see annex II).

E. Other miscellaneous proposals**1. Amendment to 5.4.1.5.12 – additional entries in the case of the application of special provisions***Document:* ST/SG/AC.10/C.3/2020/11/Rev.1 (Germany)

81. The Sub-Committee adopted the amendments proposed in option 1 to 5.4.1.5.12 (see annex I).

2. Transport of butylene

Documents: ST/SG/AC.10/C.3/2020/16 and ST/SG/AC.10/C.3/2020/69 (Spain)

82. The Sub-Committee adopted by majority the amendments proposed in paragraphs 14 and 15 in document ST/SG/AC.10/C.3/2020/69 (see annex I).

3. Miscellaneous proposals for amendments to the Model Regulations on the Transport of Dangerous Goods

Document: ST/SG/AC.10/C.3/2020/26 (ICAO)

83. It was agreed to defer the discussion of this subject to the next biennium.

4. Information on salvage in the transport document when using packagings not approved as salvage packagings

Document: ST/SG/AC.10/C.3/2020/27 (Germany)

84. The Sub-Committee adopted by majority the proposed amendments to 5.4.1.5.3 (see annex I).

5. Aromatic and flavouring, UN 1169 and UN 1197

Document: ST/SG/AC.10/C.3/2020/38/Rev.1 (Spain)

85. The Sub-Committee adopted by majority the proposal as amended in the session (see annex I). It was agreed that no transitional provision was needed.

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

Document: ST/SG/AC.10/C.3/2020/43 (FEA, HCPA)

86. The Sub-Committee adopted by majority the proposal with a modification in the English version (see annex I).

7. 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.3/2020/58 (Romania)

87. The expert from Romania reported on the result of the RID/ADR/ADN informal working group on the use of the terms “hazard” and “risk” as reflected in document ST/SG/AC.10/C.3/2020/58. He added that the informal working group on explosives would still consider matters related to Class 1. He announced his intention to prepare a final version for the next session. The secretariat was requested to share in the meantime the results with the IAEA interagency coordination group during their forthcoming session.

8. New UN entry for chlorophenols

Informal document: INF.27 (Germany)

88. It was agreed to defer the discussion of this subject to the next biennium.

VIII. Global harmonization of transport of dangerous goods regulations with the Model Regulations (agenda item 7)**A. Transport of COVID-19 vaccines based on genetically modified microorganisms**

89. The representative of WHO explained that all vaccines of COVID-19 with proven safety and efficacy need to be delivered for administration without delay despite identified challenges, including classification of vaccines using viral vectors or Genetically Modified Microorganisms (GMMOs). WHO, ICAO and IATA together with UNICEF, the World Food

Programme (WFP) and other industry partners have been working collaboratively to facilitate their transport. He added that this represents an immense logistical exercise for the global supply chain which is itself complex and diverse.

90. WHO expressed concern if vaccines containing GMMOs were regulated for transport as UN 3245 that could cause complications in transport. The Sub-Committee expressed the view that, by definition, GMMOs were not subject to the UN Model Regulations when authorized for use by the competent authorities of the countries of origin, transit and destination (see 2.9.2).

91. It was additionally suggested that a broader solution could be considered in the next biennium similar to an approach found in ADR special provision 601, which provides an exclusion from the requirements for medicines ready for use, which are manufactured and packaged for retail sale or distribution for personal or household consumption.

92. Taking note of the Sub-Committee confirmation that the vaccines in this case are not subject to the UN Model Regulations and in light of the safety of vaccines, it was proposed by WHO and ICAO to urge all Member States to exempt GMMO vaccines from dangerous goods provisions when the vaccine is in authorized clinical trial stage prior to final authorisation by the national regulatory authorities.

93. The Sub-Committee agreed that GMMO vaccines authorized for use, including those in clinical trials, are not subject to the UN Model Regulations as currently written.

B. Request for survey to better understand global dangerous goods training requirements

Document: ST/SG/AC.10/C.3/2020/55 (MDBTC, DGTA)

94. It was agreed to defer the discussion of this subject to the next biennium.

C. Survey to better understand global dangerous goods training requirements

Document: ST/SG/AC.10/C.3/2020/66 (MDBTC, DGTA)

95. The expert from DGTA underlined the importance of effective and global training of employees involved in the carriage of dangerous goods and informed the Sub-Committee about an ongoing survey on this subject. He invited all delegations to complete, by March 2021, the survey and/or to disseminate the link within their organisation. He volunteered to report back to the Sub-Committee on the outcome of the survey at a future session.

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

A. References to the IAEA Regulations for the Safe Transport of Radioactive Material

Document: ST/SG/AC.10/C.3/2020/1 (Secretariat)

Informal document: INF.24 (Secretariat)

96. The Sub-Committee adopted the amendments and the correction proposed in ST/SG/AC.10/C.3/2020/1 as amended in informal document INF.24 (see annexes I and IV). It was noted that the corresponding changes had already been included in RID/ADR/ADN.

B. Harmonization with the IAEA Regulations for the Safe Transport of Radioactive Material

Informal document: INF.30 (IAEA)

97. The Sub-Committee noted that the adoption of the proposed amendments had been overlooked during the process of harmonization of the twenty-first revised edition of the Model Regulations with the 2018 edition of the IAEA Regulations for the Safe Transport of Radioactive Material. The Sub-Committee adopted these amendments (see annex I).

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

Document: ST/SG/AC.10/C.3/2020/2 (Secretariat)

Informal documents: INF.3 and INF.37 (Secretariat)

98. The Sub-Committee recalled the purpose of the guiding principles and underlined the need to review them on a regular basis. It noted that several comments were received through the online platform and included into the proposal. The Sub-Committee adopted the proposed amendments to guiding principles as reflected in informal document INF.37, for publication on the UNECE website.

XI. New proposals (agenda item 10)

A. Amendment of Special Provision 172 and 290 of Chapter 3.3

Document: ST/SG/AC.10/C.3/2020/63 (Germany)

99. The expert from Germany announced her intention to prepare a revised document for the next session based on the comments received.

B. Criteria for passing the top lift test for wooden large packagings and fibreboard large packagings

Document: ST/SG/AC.10/C.3/2020/64 (Germany)

100. The expert from Germany volunteered to work on a revised document for the next session taking into account the comments received.

C. Clarification on P908 and P910

Document: ST/SG/AC.10/C.3/2020/71 (Belgium)

101. The Sub-Committee confirmed that the non-combustibility shall be assessed with the used thermal insulation material and the used cushion material, however without the packaging. The expert from Belgium volunteered to work on a revised document for the next session.

D. Germany requests interpretation of 6.7.2.19.5 and 6.7.3.15.5 on waiving the internal examination

Document: ST/SG/AC.10/C.3/2020/62 (Germany)

102. Delegates were invited to send comments on their interpretation to the expert from Germany, who volunteered to prepare a revised document for the next session based on the comments received.

E. Proposal of experimental approach to provide data in support of amendments concerning the text regarding fish meal (fish scrap, stabilized, UN 2216, Class 9)

Document: ST/SG/AC.10/C.3/2020/67 (IFFO)

103. The Sub-Committee noted the initiative of IFFO to set up experimental work to examine the possible stabilisation of fish meal/scrap and to report back on the results at a future session. Experts interested in this subject were invited to contact the representative of IFFO.

F. Amendment to 5.1.2.2 – Use of the word “package”

Document: ST/SG/AC.10/C.3/2020/70 (Austria)

104. Following the discussion, the Sub-Committee agreed on the need for clarification. The expert from Austria volunteered to further develop his proposal and to prepare a revised document for the next session.

G. Use of footnotes in the Model Regulations

Document: ST/SG/AC.10/C.3/2020/74 (IMO)

Informal document: INF.63 (China)

105. The expert from the United States of America, chair of the IMO Editorial and Technical Group (E&T) of the Sub-Committee on Carriage of Cargoes and Containers, withdrew proposals 2 to 5 of document ST/SG/AC.10/C.3/2020/74 and preferred to defer them to the next biennium. The Sub-Committee adopted proposals 1, 6 and 7 (see annex I).

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

A. Review of Chapter 2.1

A new Chapter 2.1 for the GHS

Documents: ST/SG/AC.10/C.3/2020/20 and Add.1 (Sweden)
ST/SG/AC.10/C.3/2020/22 (Sweden)
ST/SG/AC.10/C.3/2020/23 and Add.1 (Sweden)
ST/SG/AC.10/C.3/2020/60 (Sweden)

Informal documents: INF.15 (United States of America, IME, SAAMI)
INF.16, INF.17, INF.23, INF.33, and INF.56 (Sweden)
INF.38 (Report of the Working Group on Explosives)

106. The expert from Sweden provided a brief summary of the discussions on the review of Chapter 2.1 of the GHS. After consideration of the recommendations of the Working Group on Explosives in informal document INF.38 (paragraphs 13 to 15), the Sub-Committee endorsed them and adopted, between square brackets and subject to the adoption by the GHS Sub-Committee of the revised Chapter 2.1 of the GHS, the consequential amendments to the Manual of Tests and Criteria in document ST/SG/AC.10/C.3/2020/60 as amended in informal document INF.38 (see annex II).

B. Clarification of 2.9.3.4.3.4 of the Model Regulations and 4.1.3.3.4 of the GHS**Clarification of 2.9.3.4.3.4 of Model Regulations and 4.1.3.3.4 of GHS**

Documents: ST/SG/AC.10/C.3/2020/33 and Add.1 (China)

107. The Sub-Committee adopted by majority the clarifications to 2.9.3.4.3.4 as proposed in option 2 of ST/SG/AC.10/C.3/2020/33 (see annex I).

C. Testing of oxidizing substances**Tests for oxidizing liquids and oxidizing solids improvement regarding consideration for particle size, friable or coated materials**

Document: ST/SG/AC.10/C.3/2020/30 (France)

108. The Sub-Committee adopted the proposed amendments to the Manual of Tests and Criteria (see annex II).

D. Chemicals under pressure

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

E. Updating of references to OECD guidelines

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

F. Simultaneous classification in physical hazards and precedence of hazards

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

G. Miscellaneous

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

XIII. Programme of work for the biennium 2021-2022 (agenda item 12)**A. Unified interpretations**

Document: ST/SG/AC.10/C.3/2020/73 (United States of America)

113. The Sub-Committee noted general support to include a specific item in the new program of work to address interpretation of existing regulatory issues.

B. Implementation of UN Model Regulations

Informal document: INF.25 (United States of America)

114. The UN Model Regulations serve as the international basis for the safe multimodal transportation of dangerous goods by promoting safety and facilitating transport. As supply chains expand across continents and become more complex, the work of the Sub-Committee and the importance of updating national dangerous goods regulations to the most recent edition of the Model Regulations becomes increasingly significant.

115. A member of the secretariat informed the Sub-Committee that a draft report on the status of implementation of the GHS worldwide had been circulated as informal document INF.33 and its Add.1 and 2 to the thirty-ninth session of the GHS Sub-Committee. She indicated that the report also contained information on the status of implementation of the Model Regulations for those countries where that information was available. The Sub-Committee was invited to take note of the information provided in informal document INF.33 and its addenda and to share with the secretariat any details related to the implementation of the Model Regulations that they might be aware of so that the information could be kept updated.

116. The Sub-Committee agreed to insert a specific item in the new program of work to routinely discuss the global implementation of the Model Regulations by maintaining this topic as a standing agenda item. This type of discussion would track, promote, and facilitate the use of the Model Regulations in a transparent manner and, thus, foster safe carriage of dangerous goods.

117. It was noted that the Model Regulations were implemented for land transport through RID, ADR and ADN in all countries which are Contracting Parties to these agreements. Other countries were invited to notify, on a voluntary basis, their national implementation status to the secretariat.

C. Dangerous goods safety training and capacity building

Informal document: INF.26 (United States of America)

118. As adequate training leading to compliance with the safety provisions provided in the Model Regulations is critical to the safe carriage of dangerous goods, the Sub-Committee noted no objection to include discussions on the benefits of increased capacity building through competent training on the transport of dangerous goods.

D. Limited quantities for division 2.2 on gases

Informal document: INF.42 (COSTHA)

119. Considering the previous discussion on a new special provision based on SP653 of ADR and the preference of delegations to review the concept of extending the limited quantity provisions to division 2.2 gases, the Sub-Committee noted no opposition to include consideration of limited quantities for division 2.2 gases in the programme of work for the next biennium.

E. Consolidated programme of work for 2021-2022

120. Based on the proposals discussed and approved under sections A to D above and the various agenda items for this session, the Sub-Committee agreed to include the following items in its work programme for 2021-2022:

- (a) Explosives and related matters (including review of test series 6; improvement of test series 8; review of tests in parts I, II and III of the Manual of Tests and Criteria; UN standard detonator; review of packing instructions for explosives; application of security provisions to explosives N.O.S.; Test N.1 for readily combustible solids;

energetic samples; issues related to the definition of explosives; review of packaging and transport requirements for ANEs);

(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);

(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, limited quantities for division 2.2);

(e) Miscellaneous proposals of amendments to the Model Regulations (including documentation (e.g. e-documentation), marking and labelling issues; packaging issues and use of recycled plastics material; tank issues; fibre-reinforced plastics (FRP) portable tanks; portable tanks (other than FRP));

(f) Cooperation with IAEA;

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

(h) Guiding principles for the Model Regulations;

(i) Issues relating to the GHS (including testing of oxidizing substances; chemicals under pressure, references to OECD Guidelines; simultaneous classification in physical hazards and precedence of hazards);

(j) Unified interpretations of the Model Regulations;

(k) Implementation of the Model Regulations;

(l) Dangerous goods safety training and capacity building.

XIV. Draft resolution 2021/... of the Economic and Social Council (agenda item 13)

Informal document: INF.36 (Secretariat)

121. The Sub-Committee adopted without any objection part A of the resolution, dealing with its work during the biennium 2019-2020, based on a draft prepared by the secretariat.

XV. Election of officers for the biennium 2021-2022 (agenda item 14)

122. Following the circulation of the Chair's letter to all head of delegations in September 2020 on the rules of procedures for the election of officers for the biennium 2021-2022, no request for a secret ballot had been received. The Sub-Committee re-elected Mr. D. Pfund (United States of America) as Chair and Mr. C. Pfauvadel (France) as Vice-Chair respectively, for the next biennium.

XVI. Other business (agenda item 15)

Informal document: INF.51 (RPMASA)

123. The Sub-Committee noted the information by the representative of RPMASA on South Africa's response to the Beirut catastrophe caused by explosion of a large quantity of ammonium nitrate stored in a warehouse in the port. She reported on the initiative taken by South Africa to evaluate current regulations, and practices in place to prevent a similar type of catastrophe, and to improve national safety of dangerous goods in storage and transport. She highlighted the importance of training for seamless interpretation of multi-modal

regulations as well as good communications between modal regulators, i.e. inland transport modes and maritime.

124. The expert from France informed the Sub-Committee on a similar initiative of his government to gather data not only on the transport, but also on the storage and handling of ammonium nitrate in seaports and inland ports. The expert from Canada reported on an ongoing parallel activity in her country and volunteered to share the results with the Sub-Committee once the study is finalized. The Sub-Committee underlined the importance to learn from each other and welcomed the initiative to share best practices with all delegates.

Any other business

125. The Sub-Committee thanked the secretariat for the efficient organisation of the virtual sessions and the setting-up of the online platform for submission of written comments before the session. He considered that the possibility to exchange views in writing on the proposals in preparation of the sessions facilitated the work and asked whether this tool could be made available for all sessions. A member of the secretariat explained that setting-up and maintaining the online platform updated with all documents that were submitted for a session represented an additional workload for the secretariat that could not be assumed on a continuous basis in the light of the available staff resources. The secretariat would reconsider this matter, subject to available resources in the future.

Tributes

126. The Sub-Committee noted that Mrs. Lara Currie (IVODGA) and Mr. Jack Currie (COSTHA) had retired recently and will no longer attend the sessions of the Sub-Committee. Learning that Mr. K. Pilatus (CLEPA) would also retire in near future and no longer attend the sessions, the Sub-Committee expressed its appreciation for their excellent contributions to the work of the Sub-Committee and wished them a long and happy retirement.

XVII. Adoption of the report (agenda item 16)

127. In accordance with established practice, the Sub-Committee adopted the report on its fifty-seventh session and its annexes on the basis of a draft prepared by the secretariat.
