



**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-ninth session**

held in Geneva from 29 November to 8 December 2021

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- I. Corrections to the seventh revised edition of the Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.7 and Amend.1) ¹
- II. Draft amendments to the twenty-second revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations (ST/SG/AC.10/1/Rev.22) ¹
- III. Corrections to the twenty-second revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations (ST/SG/AC.10/1/Rev.22) ¹
- IV. Draft amendments to the Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.7 and Amend.1) ¹

¹ For practical reasons, these annexes have been published as an addendum with the symbol ST/SG/AC.10/C.3/118/Add.1.

I. Attendance

1. The Sub-Committee of Experts on the Transport of Dangerous Goods held its fifty-ninth session from 29 November to 8 December 2021, 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, Poland, Portugal, Republic of Korea, Russian Federation, South Africa, Spain, Sweden, Switzerland, United Kingdom and United States of America.
3. Under rule 72 of the rules of procedure of the Economic and Social Council, observers from Latvia, Luxembourg 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); Australasian Explosives Industry Safety Group Inc. (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 Chemical Industry Council (Cefic); European Industrial Gases Association (EIGA); European Metal Packaging (EMPAC); Institute of Makers of Explosives (IME); International Air Transport Association (IATA); International Confederation of Container Reconditioners (ICCR); International Confederation of Drums Manufacturers (ICDM); International Confederation of Intermediate Bulk Container Associations (ICIBCA); International Confederation of Plastics Packaging Manufacturers (ICPP); International Dangerous Goods and Containers Association (IDGCA); International Organization for Standardization (ISO); International Tank Container Organisation (ITCO); Medical Device Battery Transport Council (MDBTC); PRBA – The Rechargeable Battery Association; Responsible Packaging Management Association of Southern Africa (RPMASA); Sporting Arms and Ammunition Manufacturers' Institute (SAAMI); Stainless Steel Container Association (SSCA).

II. Opening of the session

Organizational matters

Informal document: INF.20 (Accreditation, registration, working arrangements and provisional timetable)

7. 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 length of meetings with interpretation allocated to the Economic Commission for Europe was limited. Taking into account those factors and the quarantine and travel restrictions in force, and the number of documents submitted for the session, and after consultation with the secretariat and conference services of the United Nations Office at Geneva, the officers of the Sub-Committee agreed to adapt the format of the fifty-ninth session.
8. Accordingly, the session was held from 29 November to 8 December 2021, in a hybrid format, with the possibility of participation online or in person, as indicated in informal document INF.20.

9. At its 2021 Management Segment, the Economic and Social Council adopted resolution E/RES/2021/13 and the programme of work of the Committee contained therein. The programme of work of the Committee included its calendar of meetings and that of its sub-committees for 2021-2022 as specified in paragraph 50 of the report of the Secretary-General on the work of the Committee, contained in E/2021/10. At the time of drafting the report of the Secretary-General, the secretariat was informed that Eid al-Adha would in all probability be observed on 8 July 2022, and consequently the dates in that report were adjusted to take account of this information. Nevertheless, in October 2021, the list of official holidays for 2022 at the United Nations Office at Geneva was circulated including the observance of the Eid al-Adha holiday in Geneva on 11 July instead of on 8 July 2022.

10. Thus, the Sub-Committee confirmed the dates of its sixtieth session to be held from 27 June to 6 July (morning) 2022 (15 half-day meetings).

III. Adoption of the agenda (agenda item 1)

Documents: ST/SG/AC.10/C.3/117 (Provisional agenda)
ST/SG/AC.10/C.3/117/Add.1 (List of documents and annotations)

Informal documents: INF.1 and INF.2/Rev.1 (List of documents)

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.42.

12. The Sub-Committee agreed to remove sub-items 2(j) to 2(l) and adopted the provisional annotated agenda prepared by the secretariat including the informal documents (see informal document INF.2/Rev.1).

A. Status of publications

13. The Sub-Committee was informed that the English and French versions of the twenty-second revised edition of the Model Regulations, the ninth revised edition of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), as well as Amendment 1 to the seventh revised edition of the Manual of Tests and Criteria (including its Corrigendum 1) had already been published and that the Spanish, Russian, Chinese and Arabic versions of the Model Regulations and of the Manual of Tests and Criteria were under preparation.

14. The Sub-Committee noted that the sixth version of the guiding principles had recently been published at the website: <https://unece.org/guiding-principles>.

B. Accreditation of experts

Informal document: INF.20 (Accreditation, registration, working arrangements and provisional timetable)

15. It was recalled that the Committee of Experts and its two subsidiary bodies are expert bodies composed of Governmental experts. In accordance with the original terms of reference of the Committee, Governments are invited, at the request of the Secretary-General and at their own expense, to make available the experts for the Committee (and its sub-committees). It is expected that the government-nominated expert represents the coordinated expertise of his/her Government. The secretariat pointed out that for some countries, the information on the expert accredited to represent the government was missing, incomplete or outdated.

16. The secretariat emphasized the importance of keeping this information up to date and invited delegations to check whether the name and contact details of the person listed as Head of delegation for their government or organisation was accurate. Changes should be notified to the secretariat as soon as possible, through official channels (i.e: through the Permanent Mission or Ministry of Foreign Affairs in the case of Governments and through an official letter or email in the case of NGOs).

IV. Explosives and related matters (agenda item 2)

A. Review of test series 6

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

B. Improvement of Test Series 8

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

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

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

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. Energetic samples

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

G. 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.

H. Review of packaging and transport requirements for ammonium nitrate emulsions

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

I. Miscellaneous

1. Amendment and correction to the Manual of Tests and Criteria

Document: ST/SG/AC.10/C.3/2021/34 (Chair of the Working Group on Explosives)

25. The Sub-Committee adopted the corrections proposed in document ST/SG/AC.10/C.3/2021/34 and an additional correction to 25.4.3.3.1 (see annex I). The Chair of the Working Group on Explosives (EWG) also noted that throughout the Manual,

two different units were used to specify densities (g/cm³ and kg/m³) and that in section A3.3 of Appendix 3, no units were used. However, he proposed to tackle these inconsistencies at a later stage.

2. New entry for 5-Trifluoromethyltetrazole, sodium salt (TFMT-Na) in Acetone as a desensitized explosive in the Dangerous Goods List of the Model Regulations

Document: ST/SG/AC.10/C.3/2021/36 (Cefic)

26. Most experts who spoke supported the proposal in general but were of the opinion that a decision on the document is premature pending the result of the toxicity test. The Sub-Committee questioned the need for a separate UN number and the reason for including PP26 requiring lead-free packagings. Cefic clarified that a separate UN number was justified given the high quantities of this substance that were expected to be transported internationally in the coming years and that the requirement of a lead-free packaging was chosen to avoid the formation of hazardous solid salts. The Sub-Committee agreed that the proposal needed some further consideration and referred the document to the EWG. The representative of Cefic invited all delegates to share in writing their comments on this subject and volunteered to prepare an updated document for consideration at the next sessions of the EWG and the Sub-Committee.

3. Follow-up on a new entry for fire suppression devices

Informal documents: INF.3 (Chair of the Working Group on Explosives)
INF.32 (COSTHA)

27. The Sub-Committee noted the progress of work by the EWG on the new entry for fire suppression devices presented in informal document INF.3. The Sub-Committee welcomed the information provided in informal document INF.32 on standards with general test requirements and the new evaluations of the United States Environmental Protection Agency (EPA) on their environmental, health and safety assessments. Some experts who spoke underlined the need of clarity and consistency for the solution on this subject and recommended the EWG to consider the history of similar cases. The Sub-Committee noted the possible way forward as proposed by the Chair of the EWG in informal document INF.3 and agreed to resume consideration of this subject at its next session in June/July 2022 based on a revised proposal, if appropriate.

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

A. Organic peroxides: new formulations to be listed in 2.5.3.2.4 and packing instruction IBC520

Document: ST/SG/AC.10/C.3/2021/33 (Cefic)

Informal document: INF.21 (China, Cefic)

28. The Sub-Committee adopted the amendments to 2.5.3.2.4 and 4.1.4.2 proposed in ST/SG/AC.10/C.3/2021/33 and informal document INF.21 as modified (see annex II).

B. New UN entry for quinone dioxime

Document: ST/SG/AC.10/C.3/2021/39 (COSTHA)

Informal document: INF.28 (COSTHA)

29. Most of the experts who took the floor did not support the proposal for a new Division 4.1 entry and expressed their preference, in the absence of data and a detailed justification, to classify quinone dioxime (also known as 1,4-benzoquinone dioxime, or p-benzoquinone

dioxime; CAS no. 105-11-3) in Class 1. The Sub-Committee agreed to refer the document to the EWG for further consideration.

C. Proposal for exemption of manufactured articles containing small amounts of Gallium - Update of document ST/SG/AC.10/C.3/2021/17

Document: ST/SG/AC.10/C.3/2021/53 (China)

30. Most experts who spoke supported in principle the intent of the proposal in ST/SG/AC.10/C.3/2021/53 but did not come to an agreement on the two proposed options to insert an exemption into the Model Regulations. The expert from China volunteered to prepare an updated document for consideration at the next session, taking into account the comments received.

D. Assignment of packing groups to articles

Informal document: INF.7 (Spain)

31. The Sub-Committee noted general support and a preference for option 2 on the elimination of packing groups for UN 2870 and UN 3165 as proposed in informal document INF.7. The expert from the United States of America suggested removing the amendment to the “Guiding Principles” document, but Spain argued that it would be inconsistent with the wording in 2.0.1.3. The expert from Spain offered to submit an official document for the next session and to take account of the comments received.

E. Revision of classification of tetramethylammonium hydroxide

Informal document: INF.12 (Netherlands)

32. The Sub-Committee noted several comments on the questions in paragraph 12 of informal document INF.12 on the classification of tetramethylammonium hydroxide (TMAH), in particular on the acute toxicity and corrosivity of TMAH solutions, the specific concentration limits and the acute toxicity of solid TMAH. There was a general agreement that the classification of TMAH shall be revised, preferably based on existing human data, if available, otherwise on animal data. The expert from the Netherlands invited all experts to send her their written comments and offered to prepare an official document for consideration at the forthcoming session in June/July 2022.

F. Proposals for batteries (wet, non-spillable) installed in cargo transport units

Informal document: INF.22 (China)

33. There was some support for the proposal in informal document INF.22 but most of the experts who spoke considered that it needed to be further developed before its adoption. The expert from Spain preferred to conclude first the ongoing discussion on the definition of cargo transport unit in reference to UN 3536 and then to decide on the new special provision. Other experts did not support the last sentence of the proposed new special provision and preferred to remove it. The Chair invited all experts to send their written comments to the expert from China. It was agreed to resume consideration of this subject at the next session on the basis of an official document by China.

G. Transport conditions for UN 2426 ammonium nitrate

Document: ST/SG/AC.10/C.3/2021/48 (Spain)

Informal document: INF.38 (Spain)

34. Some experts expressed general support on the amendments proposed in ST/SG/AC.10/C.3/2021/48. Other experts preferred to go forward with a new special provision instead of an amendment to special provision 252 and to keep the pH and chloride values in square brackets, subject to confirmation of the Sub-Committee at a later session. Following the discussion, the Sub-Committee considered the proposals in informal document INF.38 and adopted the amendments in proposal 2 as amended (see annex II).

H. Reviewing the location of the UN specification marking

Document: ST/SG/AC.10/C.3/2021/52 (China)

Informal documents: INF.17 and INF.37 (China)

35. The Sub-Committee noted general support on the intent of the proposed amendments to avoid placing the UN specification mark only on the removable top of a packaging. Following the discussion on informal document INF.37, some experts were of the opinion that the proposed text including the transitional provision still needed to be reviewed. The expert from China volunteered to prepare a revised document for the next session, taking into account the feedback received.

VI. Electric storage systems (agenda item 4)

A. Testing of lithium batteries

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

B. Hazard-based system for classification of lithium batteries

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

Document: ST/SG/AC.10/C.3/2021/45 (France, RECHARGE)

37. The Sub-Committee welcomed the information on the work progress of the informal working group on hazard-based classification of lithium batteries and cells (IWGLB), which met on 26 May 2021. It noted the conclusions of the group on the variations in the test methods, and that differences in specific toxicity posed challenges to the reproducibility of the test results, as reflected in paragraph 7 of the annex to ST/SG/AC.10/C.3/2021/45. The expert from France, chairing the IWGLB, expected the group to extend their discussion on batteries. He announced his intention to report back on the group's conclusions at the Sub-Committee session in June/July 2022 and to conclude the work on the classification and transport of lithium batteries and cells for all transport modes at the end of 2022.

38. The expert from Belgium underlined the importance of the group's work as other international working groups focussing on improving the safe transport conditions of lithium cells and batteries are anticipating on its results. He stressed the constraints of current sanitary measures and the need to achieve good progress in the near future to finalize a proposal for amendments to the Model Regulations. The Sub-Committee recommended the group to organize intersessional meetings and a lunch-time meeting during the next Sub-Committee session or discussing the subject at the plenary session, subject to the total number of documents submitted for consideration during that session.

C. Transport provisions

1. Proposed amendments to packing instruction LP903

Document: ST/SG/AC.10/C.3/2021/54 (PRBA, RECHARGE)

39. Most experts who took the floor did support the intent of the proposal but noted that the amendments to packing instruction LP903 need further clarifications. Some experts preferred to remove the proposed second sentence in the additional requirements, as it refers to a general requirement and adding it as an additional requirement could lead people to erroneously assume that it was not applicable to other packing instructions where it was not added as an additional requirement. Others raised the need to clarify whether the requirement for inner packagings applies to each individual cell or battery and to specify that the use of LP903 is reserved for large batteries only.

40. The Sub-Committee agreed to resume consideration at its forthcoming session based on a revised document by the authors who volunteered to reach out to the experts to resolve some of the comments.

2. Lithium ion batteries special provision 188 update

Informal document: INF.26 (RECHARGE)

41. Recalling the discussion on informal document INF.32 at the previous session of the Sub-Committee, the representative of RECHARGE provided updated information on lithium ion batteries. The Sub-Committee noted that, according to the data presented in informal document INF.26, there is no clear correlation between the heat of reaction and the energy density of lithium ion batteries during the thermal runaway.

42. After an exchange of views and having heard the comments and questions raised during the discussion, the representative of RECHARGE volunteered to come back at the next session with a proposal to amend special provision 188, including additional information on the assessment, measurement and classification of hazards of lithium ion batteries, jointly with feedback by the IWGLB.

D. Damaged or defective lithium batteries

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

E. Sodium ion batteries

Document: ST/SG/AC.10/C.3/2021/55 (France)

Informal documents: INF.9, INF.34 and INF.40 (France)
INF.13 (KFI)
INF.42 (Secretariat)

44. The Sub-Committee welcomed the set of proposals by France in ST/SG/AC.10/C.3/2021/55 on the assignment of a dedicated UN number and the related provisions to be introduced in both the Model Regulations and the Manual of Tests and Criteria, as amended by informal documents INF.9 and INF.34. The representative of KFI provided in informal document INF.13 some further information on their intrinsic hazard. Most experts who took the floor did support proposals 1 to 4 but could not support proposal 5 due to the lack of evidence-based limit values. On proposal 4, most delegations who spoke were in favour of the text of sub-paragraph (f) and agreed to remove the square brackets. On the repetition of the wording “using organic electrolyte” most experts preferred the alternative text proposed by France on page 2 of informal document INF.34, as amended.

45. Following the discussion, the Sub-Committee adopted the proposals 1 to 4, as amended in informal document INF.40 and detailed in informal document INF.42 (see annex II). It was agreed to resume consideration of proposal 5 once appropriate data is available.

F. Miscellaneous

1. Provisions of 2.9.4 for lithium batteries transported under special provision 310

Document: ST/SG/AC.10/C.3/2021/46 (Belgium)

46. The Sub-Committee agreed that when lithium cells or batteries are offered for transport, they must meet the provisions of 2.9.4.

47. The Sub-Committee also agreed that when lithium cells or batteries are offered for transport under special provision 310 only the provisions of 2.9.4 related to the testing requirements in the Manual of Tests and Criteria, part III, sub-section 38.3 need not be met. Most experts believed a clarification in special provision 310 to refer to the specific provisions of 2.9.4 could be helpful. Some experts believed the proposed wording should be improved and other experts suggested deleting the reference to 2.9.4 (e) (vii) on the quality assurance provisions. A few experts questioned if a clarification was really needed as special provision 310 already states that the testing requirements in the Manual of Tests and Criteria, part III, sub-section 38.3 do not apply. The expert from Belgium suggested to prepare for the next session an updated proposal taking into account the comments received. It was noted that proposals concerning the relevance of a quality management program as such shall be part of separate proposals.

2. Clarification of the wording “transport for testing” in special provision 310

Document: ST/SG/AC.10/C.3/2021/47 (Belgium)

Informal document: INF.27 (RECHARGE)

48. The proposals in document ST/SG/AC.10/C.3/2021/47 and informal document INF.27 to amend special provision 310 received general support. The Sub-Committee adopted the amendment proposed in paragraph 7 of document ST/SG/AC.10/C.3/2021/47 as amended (see annex II).

VII. Transport of gases (agenda item 5)

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

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

B. Limited quantities for division 2.2

Increase of the limited quantity volume for Division 2.2 compressed gases

Informal document: INF.33 (COSTHA)

50. Some experts supported the intent of the proposal to increase the limited quantity volume from 120 ml to 1000 ml for division 2.2 compressed gases for inland transport modes. However, in the absence of a detailed justification in particular for air transport mode, most experts who spoke were not in a position to adopt the proposed amendments to the Dangerous Goods List in the Model Regulation. The representative of COSTHA announced his intention to reach out to the experts who spoke.

C. Miscellaneous

1. Report of the intersessional working group on the pV-product limit for pressure receptacles

Informal document: INF.18 (Chair of the informal working group)

51. The Sub-Committee noted the work progress of the informal working group on the pV-product limit for pressure receptacles at its meeting on 25 October 2021. It encouraged the group to continue its work and to report back at the next session. The Chair invited all experts interested to participate in the group's work to contact the expert from Germany.

2. Correction to P200 for UN 2189, UN 1008 and UN 1859

Document: ST/SG/AC.10/C.3/2021/32 (EIGA)

52. The Sub-Committee adopted the proposed corrections to packing instruction P200 in 4.1.4.1 of the Model Regulations for UN 2189, UN 1008 and UN 1859 (see annex III). The representative of IATA asked whether similar corrections for other UN numbers, e.g. UN 1001 and UN 3374, should also be adopted. The representative of EIGA offered to review those UN numbers and to prepare, if needed, a further proposal for the next session.

3. New transitional measures for pressure receptacles

Informal document: INF.14 (EIGA)

53. The Sub-Committee noted support in principle to insert in 6.2.1.5.2, 6.2.2.7.3 and 6.2.2.11 a note on transitional measures as proposed in informal document INF.14 but was not ready to take a decision on the basis of an informal document. Furthermore, some experts preferred to add a specific date to the notes in 6.2.2.7.3 and 6.2.2.11. The Vice-Chair reminded the Sub-Committee that the proposed amendments had already been adopted by the Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods and urged the Sub-Committee to conclude the discussion on this subject at its next session. The representative of EIGA volunteered to come back to the next session with an updated official document and to take account of the comments received.

4. Reference to outdated standards

Informal document: INF.15 (Spain)

54. The Sub-Committee welcomed the proposal to remove in 6.2.2 the references to outdated standards. However, some experts preferred to keep those references in the case these standards were still used for the inspection of equipment still in use. The representative of ISO offered to proceed with a thorough analysis of these references and to come back at the next session of the Sub-Committee with a revised proposal, if appropriate.

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

A. Marking and labelling

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

B. Packagings, including the use of recycled plastics material

1. Adding a note in 6.1.4.12.1 of the UN Model Regulations

Document: ST/SG/AC.10/C.3/2021/50 (China)

56. The Sub-Committee adopted the clarification on “corrugated fibreboard boxes” proposed in document ST/SG/AC.10/C.3/2021/50 as amended (see annex II). The Chair encouraged delegations to verify if consequential amendments were necessary for other entries in chapter 6.1, for IBCs in 6.5.5.5 and for large packagings in 6.6.4.4, and to prepare a proposal for amendment, if appropriate.

2. Refrigerated transports: reference to 5.5.3 in the special provisions affected

Document: ST/SG/AC.10/C.3/2021/43 (Spain)

57. The Sub-Committee adopted proposals 1 to 4 in document ST/SG/AC.10/C.3/2021/43 as amended (see annex II).

3. Duplicated text in 4.1.1.12

Document: ST/SG/AC.10/C.3/2021/44 (Spain)

58. Most experts who spoke acknowledged the intent of the proposal but did not agree to delete 4.1.1.12 which is needed for users of packagings. A deletion would result in several consequential amendments. Some experts expressed their preference to keep the paragraph in both chapters 4 and 6, for awareness and reference purposes, but to review and shorten the text. The expert from Spain proposed to prepare a revised document for further consideration at the next session.

4. Problems with the practical implementation of packing instruction P650

Document: ST/SG/AC.10/C.3/2021/49 (Spain)

Informal document: INF.41 (Spain)

59. The Sub-Committee noted a number of general comments on the practical implementation problems of packing instruction P650, in particular regarding the drop test and pressure test of packagings. Most experts were of the opinion that the provisions of packing instruction P650 were severe enough to ensure robust packagings and that the problem might be a compliance problem. It was underlined that the final responsibility of packagings lies with the consignor who must ensure that the packagings used were in compliance with the provisions in the Model Regulations. Some delegations underlined the importance of this subject due to similar domestic problems and stressed the need to clarify the application of the provisions.

60. Following the lunch-time meeting organized by Spain on this subject, the Sub-Committee noted that amendments to the Model Regulations were needed to clarify the application of the current test provisions for packagings. The expert from Spain announced her intention to organize a further intersessional meeting on this topic beginning of 2022. The Sub-Committee welcomed this initiative by Spain and agreed to resume consideration of the subject at its next session.

61. The Sub-Committee considered and adopted the corrections to the Spanish version of packing instruction P650 as proposed in informal document INF.41 (see annex III).

5. Supplementary note in 6.1.5.3.4 on the target in the drop test for packagings

Document: ST/SG/AC.10/C.3/2021/51 (China)

Informal document: INF.24 (ICCR, ICDM, ICIBCA, ICPP)

62. Most experts who spoke were not in the position to support the note to 6.1.5.3.4 as proposed in ST/SG/AC.10/C.3/2021/51 and said that the proposal need some further improvements. The representative of ICIBCA presented the historical background of 6.1.5.3.4 and preferred not to insert the note. The expert from Germany informed the Sub-Committee about their ongoing research on the drop test for packagings in particular on the specific technical parameters mentioned in the proposed note and expected the study results in 2023. The Sub-Committee agreed to resume discussion on the subject at a future session, awaiting further information on the research.

6. Micro holes (perforations) on water resistant bags

Informal document: INF.30 (Turkey)

63. On the questions in informal document INF.30 on how to evaluate the water-resistance of paper, textile, and woven plastic bags, in particular those with perforations (micro-holes) some experts provided feedback and offered to send more detailed information directly to the expert from Turkey (zegenel@tse.org.tr).

C. Portable tanks

1. Amendments to Chapter 6.7 of the Model Regulations

Document: ST/SG/AC.10/C.3/2021/35 (IDGCA)

64. Most experts who took the floor were not in the position to support the proposal in the absence of a detailed justification. Some experts felt that an update of the reference to standard ISO 1496 would be sufficient but needed a number of consequential amendments. Other experts expressed their opinion that the standard itself might need to be amended to resolve the issue. The Chair invited experts to send their written comments to the representative of IDGCA (info@idgca.org).

2. Canada requests interpretation of definition of “fine grain steel” in 6.7.2.1

Informal document: INF.5 (Canada)

65. Most experts who spoke agreed on the need to clarify the definition but did not support the deletion of the word “ferritic” in the definition. The proposal received several comments. The expert from Canada announced her intention to reach out to the experts who commented and to bring back the information at a future session of the Sub-Committee. The expert from the United States of America offered to consult with the expert from Canada and discuss possible options on the best way forward to resolve the issue.

3. Impact testing of portable tanks and MEGCs: amendment to Section 41 of the Manual of Tests and Criteria

Informal document: INF.6 (Canada)

66. The Sub-Committee noted no objection on the proposal to clarify paragraph 41.3.4.4 of the Manual of Tests and Criteria and agreed to keep that adopted text in square brackets (see annex IV).

4. Report of the informal working group on FRP service equipment for portable tanks

Informal documents: INF.8 and INF.39 (Chair of FRP service equipment)

67. The Sub-Committee welcomed the information on the progress of work of the informal working group on fibre-reinforced plastics (FRP) service equipment for portable tanks during its recent meetings. The informal working group was encouraged to continue its work in particular on design criteria, approval provisions, inspection and test requirements. The Chair invited all experts interested to participate in the group's activities to contact the Chair of informal working group (i.sergeichev@skoltech.ru).

68. The secretariat was requested to arrange a one-day hybrid meeting of the FRP informal working group in conjunction with the forthcoming session of the Sub-Committee.

D. Other miscellaneous proposals

1. Rolling hoops requirement for metal drums

Document: ST/SG/AC.10/C.3/2021/40 (Canada, ICDM)

69. The Sub-Committee recalled the discussion at its previous session on the ambiguity in 6.1.4.1.4 of the wording "shall, in general" and adopted the clarification to the Model Regulations as proposed in ST/SG/AC.10/C.3/2021/40 (see annex II).

2. Proposal for displaying the prevention of dangerous electrostatic discharge

Document: ST/SG/AC.10/C.3/2021/42 (Republic of Korea)

Informal document: INF.23 (ICCR, ICIBCA, ICPP)

70. Most experts that spoke did not support the amendments proposed in ST/SG/AC.10/C.3/2021/42 to insert into the Model Regulations new provisions including a new symbol on the protection against electrostatic discharge (ESD). Some experts felt that the new provisions were not needed or might be misleading. Other experts preferred to resolve the safety issue through other possible solutions, such as training of the persons involved in the operations of handling, loading or unloading of IBCs. The expert from France suggested clarifying in a first stage whether the current ESD provisions were applicable at any time during the transport of the IBC or only for loading and unloading.

71. Following the discussion, the expert from the Republic of Korea offered to prepare a revised proposal for the next session, taking into account the expert views.

3. Deletion of transitional measures

Informal documents: INF.4 and INF.16 (Spain)
INF.10 (Sweden)

72. The Sub-Committee agreed to the amendments proposed in informal documents INF.4 and INF.10 to delete some outdated transitional measures in the Model Regulations but decided to keep them in square brackets subject to the confirmation by the Sub-Committee at a future session (see annex II).

73. On the amendments proposed in informal document INF.16, the Sub-Committee agreed to proposal 1 to delete the note to special provision 384 in square brackets (see annex II). The expert from Spain volunteered to revise proposals 2 and 3 and to submit an official document for consideration by the Sub-Committee at the forthcoming session.

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

1. Exclusion of pharmaceutical products from UN 3245

Document: ST/SG/AC.10/C.3/2021/38 (ICAO, WHO)

74. Bearing in mind the evolution of the ongoing pandemic, most experts who spoke endorsed the need to clarify the provisions of the Model Regulations and supported the proposed exclusion of pharmaceutical products from UN 3245. Other experts recalled the decision of the Sub-Committee at its fifty-seventh session in December 2020 that Genetically Modified Microorganism (GMMO) vaccines authorized for use shall not be subject to the Regulations and were wondering why the scope of exclusion was extended to pharmaceutical products. The representative of ICAO explained that their Technical Instructions have been amended twice in a similar way, first to exclude vaccines containing GMMOs and subsequently to exclude pharmaceutical products containing GMMOs, noting this would facilitate the transport of new drugs that were being developed to alleviate COVID-19 symptoms. Following the discussion, the Sub-Committee adopted the amendments proposed in ST/SG/AC.10/C.3/2021/38 (see annex II).

2. Corrections to the Model Regulations and the Manual of Tests and Criteria

Informal document: INF.25 (Secretariat)

75. The Sub-Committee adopted the corrections proposed in informal document INF.25 (see annex I).

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

Informal document: INF.29 (IMO)

76. The Sub-Committee noted the outcome of the thirty-fifth session of the Editorial and Technical Group (the IMDG Code) and welcomed the actions taken by IMO in relation to the next amendment of the IMDG Code. On the proposals in paragraphs 5 and 7 of informal document INF.29 to amend 5.3.1.1.5.1 and to correct in the table in 1.2.2.1 the new entry for “Electrical resistance”, it was noted that IMO would submit an official document for the next Sub-Committee session.

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

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

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

Informal document: INF.19 and Add.1 (RPMASA, ICPP)

78. The Sub-Committee noted general support on option 2 proposed in informal document INF.19/Add.1 to add explanatory wording to the Guiding Principles, in particular a line in table 4.2 of packing assignments with an explanatory note^b. It was agreed that RPMASA submit this proposal in an official document to the next session.

XII. Issues relating to the Globally Harmonized System of Classification and Labelling of Chemicals (agenda item 10)

A. Testing of oxidizing substances

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

B. Simultaneous classification in physical hazards and precedence of hazards

Informal document: INF.36 (Germany)

80. The Sub-Committee welcomed the status report of the informal working group on combinations of physical hazards and noted that the group would resume its work during a further meeting scheduled on 26 January 2022.

C. Miscellaneous

Document: ST/SG/AC.10/C.3/2021/37 (Germany)

81. Some delegations supported in principle the amendments proposed in annexes I and II to GHS Chapter 2.17 on “Desensitized explosives” and in annex III to the section 51 of the Manual of Tests and Criteria. Some experts felt that the proposed texts need further consideration and preferred to refer the proposals to the EWG. The expert from Germany encouraged all experts to send her written comments and volunteered to submit an updated document for consideration at the next sessions of the Sub-Committee and the EWG.

XIII. Unified interpretation of the Model Regulations (agenda item 11)

1. Request for interpretation of special provision 141 of UN 2969

Document: ST/SG/AC.10/C.3/2021/41 (Republic of Korea)

82. Most experts who took the floor preferred to further discuss specific criteria for the meaning of “sufficient heat treatment”. The Chair encouraged all experts to send their written comments to the expert from the Republic of Korea (ckj0403@korea.kr). The Sub-Committee agreed to continue discussion of this subject at its next session based on a proposal by Korea.

2. Packing instructions of COVID-19 dry waste

Informal document: INF.11 (Netherlands)

83. Upon the inquiry of the expert from the Netherlands on how countries encountered the recent challenges due to the large quantities of waste related to COVID-19, most experts who took the floor reported on their experiences and solutions they applied on a national basis to resolve the shortage of packagings, the storage in containers and the transport to disposal facilities of wastes under UN numbers 3373 and 3291. The Chair welcomed the contributions and invited all experts to send their written comments to the expert from the Netherlands.

XIV. Implementation of the Model Regulations (agenda item 12)

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

XV. Dangerous goods safety training and capacity building (agenda item 13)

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

XVI. Other business (agenda item 14)

A. Review of ECOSOC subsidiary bodies to be conducted during the 2022 session of ECOSOC, expected contributions from the TDG Sub-Committee and related follow-up actions

Informal document: INF.31 and Rev.1 (Secretariat)

86. The Sub-Committee noted several comments and additions to the draft text of annex I of informal document INF.31 and agreed to add contributions to sustainable development goal 13 on climate action. On the questionnaire in annex II, it also noted some information on the relevance of the normative work of the Sub-Committee and ideas on policy guidance (as reflected in informal document INF.31/Rev.1) as inputs by the secretariat on behalf of the Sub-Committee for the preparation of the 2022 Coordination Segment of ECOSOC scheduled to be held on 3 and 4 February 2022.

B. Progress report on South Africa's AN Task Group formed after the August 2020 Beirut Port catastrophic explosion of ammonium nitrate

Informal document: INF.35 (RPMASA)

87. The Sub-Committee noted the progress report on the lessons learned by the South African AN task force in response of the Beirut Port explosion in 2020. The representative of RPMASA informed the Sub-Committee that an expert from South Africa will present on this to the UN/OECD Seminar on the 14 December 2021. The expert from France recalled that his government published a report on risk management related to the presence of ammonium nitrate in harbours and maritime ports and is available in French language at: http://www.cgedd.developpement-durable.gouv.fr/IMG/pdf/013535-p_rapport_public_cle051f41.pdf.

C. UN/OECD seminar in follow-up to the 2020 Beirut port explosion

88. The Sub-Committee noted the updated information by UNECE and the Organisation for Economic Co-operation and Development (OECD) on the organization of a seminar on 14 December 2021 (from noon to 4:30 p.m.) on the 2020 Beirut port explosion in particular on lessons learned, experiences and good practices in managing risks of ammonium nitrate storage, handling and transport in port areas, preventing accidents and mitigating their consequences. All interested delegations were invited to register at the latest on 8 December through the link circulated by the secretariat on 1 December 2021.

D. Meeting dates for the sixtieth session

89. The Sub-Committee noted the meeting dates and document submission deadlines for its sixtieth session as follows:

- Meeting dates: From 27 June to 6 (a.m.) July 2022;

- Deadline for submission of official documents: 1 April 2022 (for official documents submitted for consideration by the TDG Sub-Committee).

XVII. Adoption of the report (agenda item 15)

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