



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-eighth session

held in Geneva from 28 June to 2 July 2021

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I. Attendance

1. The Sub-Committee of Experts on the Transport of Dangerous Goods held its fifty-eighth session from 28 June to 2 July 2021 with Mr. Duane Pfund (United States of America) as Chair and Mr. Claude Pfauvadel (France) as Vice-Chair.
2. Experts from the following countries took part in the session: Australia, Austria, Belgium, Brazil, Canada, China, Finland, France, Germany, Italy, Japan, Mexico, Netherlands, Norway, Poland, 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, Republic of Moldova 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: Australasian 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 Chemical Industry Council (Cefic), European Metal Packaging (EMPAC), European Industrial Gases Association (EIGA), Fertilizers Europe (FE), 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 Plastics Packaging Manufacturers (ICPP), International Council of Intermediate Bulk Container Associations (ICIBCA), International Dangerous Goods & Containers Association (IDGCA), International Fibre Drum Institute (IFDI), International Organization for Standardization (ISO), International Paint and Printing Ink Council (IPPIC), International Tank Container Organisation (ITCO), Medical Devices Battery Transport Council (MDBTC), Metal Packaging Europe (MPE), PRBA — The Rechargeable Battery Association, Responsible Packaging Management Association of Southern Africa (RPMASA), Sporting Arms and Ammunition Manufacturers' Institute (SAAMI) and World LPG Association (WLPGA) and Liquid Gas Europe (European LPG Association).

II. Opening of the session

Organizational matters

7. The Sub-Committee was informed that due 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 number of meeting rooms available for hybrid meetings, the share of meetings with interpretation allocated to the Economic Commission for Europe was reduced from the usual three meetings per day to just one per day for the first half of 2021. Furthermore, the duration of the morning or afternoon hybrid meetings were still limited to two hours instead of the usual three hours. Taking into account those factors and the quarantine and travel restrictions in force, 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 again the format of the fifty-eighth session.

8. Accordingly, and taking into account that the number of documents submitted, the session was held from 28 June to 2 July 2021, in a hybrid format, with the possibility of participation online or in person.

9. Upon the invitation of the Division of Conference Management (DCM) of the United Nations Office at Geneva, the Sub-Committee was invited to take an online survey (<http://conf.unog.ch/dcmsurvey>) concerning the quality of conference services provided at the session.

III. Adoption of the agenda (agenda item 1)

Documents: ST/SG/AC.10/C.3/115 (Provisional agenda)
ST/SG/AC.10/C.3/115/Add.1 (List of documents)

Informal documents: INF.1 and INF.2 (List of documents)
INF.14 (Administrative arrangement and provisional timetable)
INF.35 (ECOSOC resolution E/RES/2021/13)

10. The representatives of CGA and EIGA withdrew document ST/SG/AC.10/C.3/2021/31 (agenda item 3) and offered to submit a revised proposal for consideration at a future session.

11. The Sub-Committee adopted the provisional agenda prepared by the secretariat including informal documents (INF.1 to INF.48).

ECOSOC Resolution 2021/13 and status of publications

12. A member of the secretariat informed the Sub-Committee that on 8 June 2021, the Economic and Social Council had considered the report of the Secretary-General on the work of the Committee and its sub-committees during 2019-2020 (document E/2021/10) and had adopted without change the resolution prepared by the Committee at its tenth session (ST/SG/AC.10/48, annex IV). The Resolution was published under the symbol E/RES/2021/13 (see informal document INF.35).

13. The Sub-Committee was also informed that the secretariat had already published the English edition of the twenty-second revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations and the ninth revised edition of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS). Publication of the English and French editions of the amendment to the seventh revised edition of the Manual of Tests and Criteria is expected to be published before the end of 2021.

IV. Explosives and related matters (agenda item 2)

Report of the Working Group on Explosives

Informal documents: INF.23 (Chair of the Working Group on Explosives)
INF.45 and INF.48 (IME)

14. Mr. E. de Jong (Netherlands) chairing the Working Group on Explosives (EWG) informed the Sub-Committee on the outcome of the group's meeting, which was held remotely from 14 to 16 and 18 June 2021. Having heard the explanations provided by Mr. de Jong, the Sub-Committee noted the conclusions by the EWG as listed below for each subject under consideration under agenda items 2, 3 and 6 (d).

15. The Sub-Committee decided to extend the transitional period of electronic detonators to 30 June 2025 and adopted the new special provision and the amendment to the Dangerous Goods List proposed in informal document INF.48 as modified during the session (see annex). It was recommended that the new entries for electronic detonators should be implemented as soon as practical into the relevant regulations.

Corrections to GHS Chapter 2.17 (desensitized explosives)

Document: ST/SG/AC.10/C.4/2021/6 (Sweden)

Informal document: INF.23 (EWG Chair)

16. The Sub-Committee endorsed the outcome of the EWG on the proposal by Sweden for consequential amendments to Chapter 2.1 of GHS, as reflected in paragraph 17 of informal document INF.23.

A. Review of test series 6**1. Improvement of the 6(d) test**

Document: ST/SG/AC.10/C.3/2021/14 (SAAMI)

Informal document: INF.10 (SAAMI)

17. The Sub-Committee noted the outcome of the discussion of the EWG as presented by the group's Chair. The representative of SAAMI invited all experts interested in the subject to send him their feedback on the discussion items reflected in paragraph 6 of the EWG report in informal document INF.23. He volunteered to develop for the next session a formal proposal on the improvement of the 6(d) test taking into account the comments received.

2. Exclusion from Class 1

Document: ST/SG/AC.10/C.3/2021/15 (SAAMI)

18. On the exclusion from Class 1 of certain very low hazard energetic articles, the opinions of the working group were divided. The expert from France recalled that the discussion in the EWG on this subject was closely linked to the exit from Class 1 of certain safety devices as raised document ST/SG/AC.10/C.3/2021/27 tabled under agenda item 3. The representative of SAAMI volunteered to develop, in a first step, further data for the next EWG meeting and to address the classification issue in a further step. The Sub-Committee noted that further work by the working group was necessary and agreed to resume discussion at its next session.

3. Thermal flux calculation in the 6(c) test

Document: ST/SG/AC.10/C.3/2021/19 (China)

19. The Sub-Committee decided to amend the description of parameters for the thermal flux calculation according to the Manual of Tests and Criteria (MTC), Table 16.2 in option 2 in paragraph 5 of ST/SG/AC.10/C.3/2021/19. The Sub-Committee adopted the correction (see annex). The secretariat was requested to harmonize the spelling of "metre" through the Model Regulations and the MTC.

B. Improvement of test series 8

Informal document: INF.8 (IME)

20. The Sub-Committee noted that there was general support by the EWG on the need to further discuss the proposal to waive under certain conditions the 8(d) vented pipe tests. It was agreed that EWG should continue its work on this subject and that IME would take into account the outcome of the discussions at future meetings.

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

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

D. “UN” standard detonators

22. 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

Document: ST/SG/AC.10/C.3/2021/13 (United Kingdom)

23. The EWG Chair reported that there had been general support by the EWG on the need to improve the text of special packing provision PP70 in packing instruction P137, but no consensus had been reached on the proposed wording. The Sub-Committee noted that the EWG would resume discussion at its next meeting based on an updated proposal by the United Kingdom.

F. Energetic samples

24. 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

Informal document: INF.12 (Sweden)

25. Based on the progress of work done on the revision of Chapter 2.1 of GHS, the Sub-Committee endorsed the EWG's position to continue the work of the Informal Correspondence Group (ICG) on the definition of explosives under the leadership of Sweden, in particular to re-evaluate the concerns on the definitions of "explosive substances" and "Class 1".

H. Review of packaging and transport requirements for ANEs

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

I. Miscellaneous

1. New and novel pyrotechnic formulations for fireworks

Informal document: INF.17 (United Kingdom)

27. The EWG had discussed suggestions on how to handle the approval applications (according the default fireworks classification table in 2.1.3.5.5) for new and novel firework compositions, which have a potential increase in the energetic performance compared to more traditional compositions. The Sub-Committee welcomed the information on the ongoing discussion in EWG and encouraged the group to continue the work on this subject.

2. New entry for 5-Trifluoromethyltetrazole, sodium salt (TFMT-Na) in acetone as a desensitized explosive

Informal document: INF.21 (Cefic)

28. Due to late submission, the EWG had only briefly considered informal document INF.21 seeking guidance on how to proceed with the toxicity testing of desensitized explosives. The representative of Cefic invited all experts to send him their comments, especially with respect to their experiences in toxicity testing of such explosives and their guidance on the proposed amendments to 3.2.2 and the new packing instruction.

3. Miscellaneous issues raised by the EWG

Informal document: INF.23 (Chair of EWG)

29. The Sub-Committee endorsed the corrections to the MTC proposed by the EWG in paragraph 18(a) and (b) of informal document INF.23 and invited the group to prepare an official document for the next session.

30. Regarding paragraph 18(c) on the need for a recommendation on the implementation of the new entries for electronic detonators (UN 0511, UN 0512 and UN 0513), the representative of IME volunteered to prepare a proposal for consideration by the Sub-Committee.

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

A. Correction and alignment of 2.0.3.1, 2.6.2.2.4.1 and 2.8.2.4 in the English and French versions

Document: ST/SG/AC.10/C.3/2021/1 (Canada)

31. The proposal by Canada on the need to align the language versions of 2.0.3.1, 2.6.2.2.4.1 and 2.8.2.4 in the Model Regulations received general support. However, some delegations considered that more work and information were needed to clarify the amendments proposed in document ST/SG/AC.10/C.3/2021/1, in particular as regards the precedence of hazard characteristics. Several delegations suggested that it might be convenient to harmonize the text across all three paragraphs and also for the other language versions of the Model Regulations to avoid differing interpretations. The Sub-Committee welcomed the offer by the expert from Canada to contact the delegations who commented and to prepare a revised proposal for the next session.

B. New UN entries for chlorophenols

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

32. The Sub-Committee noted support by some experts on the need to insert new entries in the Dangerous Goods List for corrosive solid and liquid chlorophenols with toxic subsidiary hazard (division 6.1). However, questions were raised regarding: the proper shipping name, which of the isomers of chlorophenol these entries would apply to, classification evidence of referenced sources such as GHS, the assigned transport instructions and provisions, the need for data (and sources) on other isomers besides 2,4-dichlorophenol to take a decision and the possible overlap of these new entries with UN 3155. The expert from Germany volunteered to supplement the document with additional data and to prepare a revised proposal for consideration at the next session.

C. New special provision to UN 3538

Document: ST/SG/AC.10/C.3/2021/12 (United Kingdom)

33. Most experts who spoke were not in favour of either option proposed in ST/SG/AC.10/C.3/2021/12 and were of the opinion that, in this respect, there was no need for additional provisions in the Model Regulations.

34. The Sub-Committee agreed that articles of UN 3538 containing gases meeting the conditions described in 2.2.2.3, including the gas cylinders, were not subject to the regulations.

35. The expert from Switzerland suggested listing such decision on the UNECE website on interpretations issues. The Chair offered to resume discussion of this subject when discussing informal document INF.19 on unified interpretations of the Model Regulations under agenda item 11 (see para. 90 below).

D. Proposal for unifying animal species for evaluation test of acute dermal toxicity in GHS and Model Regulations

Document: ST/SG/AC.10/C.3/2021/16 (China)

36. The Sub-Committee could not find a consensus on the proposal. While some delegations agreed to the principle of harmonizing the provisions with GHS without promoting animal testing, most experts who spoke noted general caution of possible impacts of such an amendment, such as far reaching reclassifications and the possibility of increased animal testing. The expert from China invited all experts to further comment on the document via email and offered to prepare an updated proposal for a future session.

E. Proposal to amend SP 366, making it also adjust to gallium contained in manufactured articles

Document: ST/SG/AC.10/C.3/2021/17 (China)

37. Most experts who spoke were in favour of the first option for both proposals in document ST/SG/AC.10/C.3/2021/17, while other experts were questioning the need for a new UN number or could not support the approach proposed. Furthermore, some experts requested a justification for the inclusion of PP41 referring to "dry ice" in the newly proposed entry. The Sub-Committee welcomed the offer by China to prepare an updated document for the next session, taking into account the comments received.

F. UN packing group of magnetized material

Document: ST/SG/AC.10/C.3/2021/18 (China)

38. The Sub-Committee adopted the amendment proposed in ST/SG/AC.10/C.3/2021/18 (see annex).

G. Transport conditions for UN 2426 ammonium nitrate

Document: ST/SG/AC.10/C.3/2021/21 (Spain)

Informal document: INF.24 (Fertilizers Europe)

39. There was no opposition by the Explosive Working Group to the amendments proposed in ST/SG/AC.10/C.3/2021/21. Some experts suggested minor editorial amendments, others preferred to verify the proposed pH value. Spain informed the Sub-Committee that they would come back with an updated proposal to the next session, leaving more time for delegations and stakeholders to check the possible impacts of the suggested changes and asked for any further comments to the proposed conditions to be sent in writing.

H. Fire suppression devices that contain a pyrotechnic material

Document: ST/SG/AC.10/C.3/2021/27 (COSTHA)

Informal documents: INF.23 (Chair EWG)
INF.36 (France)

40. The Sub-Committee welcomed the information in ST/SG/AC.10/C.3/2021/27 and INF.36 on the broad application of fire suppression devices that contain a pyrotechnic material. Many experts pointed out that the entry UN 3268 is for safety devices for vehicles. Some experts proposed that solutions other than an assignment to this entry should be considered. It was noted that the Explosive Working Group had agreed to resume consideration of this subject at its next meeting. In the absence of a detailed proposal for amendments, the Sub-Committee decided to continue the discussion at its next session on the basis of a new proposal by COSTHA.

41. The Chair of the Explosive Working Group volunteered to organize an intersessional meeting to further elaborate on the documents ST/SG/AC.10/C.3/2021/15, ST/SG/AC.10/C.3/2021/27 and informal documents INF.28 and INF.51 of the fifty-sixth session. The Explosives Working Group will focus their intersessional work on the three questions shown in paragraph 5 of informal document INF.51 from the fifty-sixth session and considerations unique to these products.

I. Problems with the practical implementation of P650

Informal document: INF.9 (Spain)

42. Some experts who spoke did not confirm difficulties in the transport of biological products related to UN 3373 and the related use of packing instruction P650. Other experts said that the capability of the primary and secondary packagings in P650 seemed to be sufficient providing these criteria are guaranteed but there might be problems in the way this capability is assessed. Without providing mandatory testing methods for these packagings, the Model Regulations could give some guidelines along the line of those given in the Note in packing instruction P650 of the ICAO Technical Instructions. The Sub-Committee noted that no safety related evidence was provided that would justify amending the provisions of the Model Regulations. The expert from Spain offered to follow up on this subject at the next session.

J. Clarification of generic concentration limits for skin corrosion classification in the UN Model Regulations

Informal document: INF.25 (China)

43. The experts from Germany and Belgium confirmed that the calculation method and the formula in the Model Regulations are correct. It was acknowledged that the provisions are difficult to understand even though the example in 2.8.4.3.5 was added to facilitate the application of the specific concentration limits for the different packing groups. The expert from China announced to follow up with the experts who commented and volunteered to come back, if necessary, with a revised document at a future session.

K. Classification of UN 1010, mixtures of butadienes and hydrocarbons

Document: ST/SG/AC.10/C.3/2021/22 (Cefic)

Informal documents: INF.40 and INF.44 (Cefic)

44. Most experts supported the proposal in ST/SG/AC.10/C.3/2021/22. Noting the explanatory information on vapor pressure of butadienes/hydrocarbons-mixtures in informal document INF.40, the expert from Spain preferred to insert a new special provision.

45. Following the discussion, the Sub-Committee adopted the proposal as amended in informal document INF.44 and agreed to keep the text of the new special provision in square bracket (see annex).

46. The Sub-Committee noted that a multilateral agreement was initiated by the Netherlands in accordance with RID/ADR/ADN to allow in RID/ADR/ADN countries who would sign the agreement the transport of butadienes according to the adopted proposal. The representative of Cefic invited all contracting parties or contracting states to RID/ADR/ADN to sign this multilateral agreement.

VI. Electric storage systems (agenda item 4)

A. Testing of lithium batteries

47. 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

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

C. Transport provisions

1. Interpretation of the term “cargo transport unit” within the context of the transport of UN 3536 - LITHIUM BATTERIES INSTALLED IN CARGO TRANSPORT UNIT

Document: ST/SG/AC.10/C.3/2021/7 (Germany)

49. The expert from France recalled a similar discussion at the fifty-fifth and fifty-sixth session of the Sub-Committee (see reports ST/SG/AC.10/C.3/110, para. 63 and ST/SG/AC.10/C.3/112, paras. 110 and 111). Some experts confirmed the need for clarification of the terms “cargo transport unit” and “freight container” in the Model Regulations. Other experts expressed their preference to resolve the issue with a new special provision. On the question to clarify whether container serving as battery casing for devices under UN 3536 should be CSC (Convention for Safe Containers) approved, it was suggested to clarify this in either special provision 389 or to amend the proper shipping name. Most delegations who spoke considered that the containers didn’t need to comply CSC in that case. The expert from Germany volunteered to take account of the comments received and to come up with a proposal at the forthcoming session.

2. Lithium-ion batteries special provision SP188 update

Informal document: INF.32 (RECHARGE, PRBA)

50. Following the discussion, the Sub-Committee could not agree on the proposed amendments. It was noted that the technical progress of lithium-ion cells and the increase of energy density does not serve as evidence for safer transport. The Sub-Committee recalled that special provision 188 sets limits on the Watt-hour rating because the hazard is linked to the amount of energy. The representative of RECHARGE offered to prepare an updated proposal, including a detailed justification, for consideration at the next session.

3. Lithium-ion batteries testing, paragraph 38.3 g) update

Informal document: INF.33 (RECHARGE, PRBA)

51. The Sub-Committee did not support the proposal. It was noted that there are different considerations for overcharge and external short circuit hazards. The representative of RECHARGE volunteered to update his proposal for the next session, taking into account the comments received.

D. Damaged or defective lithium batteries

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

E. Sodium ion batteries

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

F. Miscellaneous

1. Proposed amendments to packing instruction LP903

Document: ST/SG/AC.10/C.3/2021/28 (PRBA)

54. Many experts expressed general support on the intent of the proposal but agreed that further work is necessary to clarify the responsibilities and the testing provisions for such large packagings. Others expressed concerns over the use of LP provisions to transport many batteries in a manner inconsistent with the general use of large packagings. The representative of PRBA suggested further developing the proposal and coming up with a new document for the next session.

2. Cells and batteries installed in cargo transport units and 2.9.4

Informal document: INF.15 (Switzerland)

55. Some experts were of the opinion that the provisions of 2.9.4 apply to the cells and batteries only and that the proposed extension of the scope should be deferred to a later time point once the discussion on cargo transport units is concluded (see para. 49 above). The Sub-Committee noted the merit of the proposal and agreed to resume consideration at a future session on the basis of a revised proposal by Switzerland.

VII. Transport of gases (agenda item 5)

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

56. 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

Document: ST/SG/AC.10/C.3/2021/26 (COSTHA)

57. Most experts who spoke expressed their general support on the intent of the proposal but could not fully agree to include liquefied gases. Some experts raised their concern to align the limited quantity limits of division 2.2 compressed gases to the limited quantity limits for aerosols and expressed concerns over a lack of discussion on pressure limits. Additionally, some delegations said that requirements for construction and testing of cylinders should be applicable for the transport of these larger cylinders under the limited quantity regime and therefore some amendments in chapter 3.4 for limited quantities would be needed. The Sub-Committee agreed on the need to review the proposal and to supplement the document with a solid justification and risk analysis. Thus, the representative of COSTHA offered to review the proposal and to submit a revised document for consideration at the forthcoming session.

C. Miscellaneous

1. Special packing provisions for goods of Class 2 – 4.1.6.1.8 Requirements for valve protection

Document: ST/SG/AC.10/C.3/2021/6 (EIGA)

Informal document: INF.5 (EIGA)

58. The Sub-Committee adopted the proposed amendments in ST/SG/AC.10/C.3/2021/6 as amended by informal document INF.5 (see annex).

2. Updated ISO standards in Class 2

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

Informal document: INF.39 (ISO)

59. The Sub-Committee adopted the proposal in document ST/SG/AC.10/C.3/2021/10 to amend the references to ISO standards as amended in informal document INF.39 (see annex).

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

Informal document: INF.38 (Germany)

60. The Sub-Committee welcomed the outcome of the intersessional working group on the pV-product limit for pressure receptacles and encouraged the group to continue its work. It was clarified that the group's discussions on the level of risk assessment was linked to the specific risks of pressure receptacles only and not to a general type of risk.

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

A. Marking and labelling

61. 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. Criteria for passing the top lift test for wooden large packagings and fibreboard large packagings – revised version of ST/SG/AC.10/C.3/2020/64

Document: ST/SG/AC.10/C.3/2021/4 (Germany)

62. The Sub-Committee adopted the proposal in document ST/SG/AC.10/C.3/2021/4 (see annex).

2. Testing the non-combustibility related to packages for lithium batteries

Document: ST/SG/AC.10/C.3/2021/20 (Belgium)

Informal document: INF.22 (Sweden)

63. Most experts supported the proposals which clarify that non-combustibility applies to the cushioning material and the thermal insulation. Some experts raised concern on the new note referring to standard ISO 1182. In the case of a decision to keep that reference, the expert from Sweden proposed in informal document INF.22 to include acceptance criteria of the non-combustibility and a reference to the standard in each packing instruction that contain requirements for non-combustible material.

64. The Sub-Committee adopted the amendments in proposals 1 to 6 of document ST/SG/AC.10/C.3/2021/20 but decided to remove the note from each of the proposals (see annex). There was no consensus to add the country that certified the packaging as a country that recognize standards for testing the non-combustibility. The expert from Germany mentioned that it would be promising to discuss separately whether the country that certified the packaging (the country of approval) can be a different one than the country of manufacture as indicated in paragraph 5 of document ST/SG/AC.10/C.3/2021/20. He invited all delegates to share intersessionally their comments on this subject.

3. Revision of ISO 535:1991

Informal document: INF.4 (Spain)

65. The Sub-Committee adopted the amendment proposed in informal document INF.4 (see annex).

4. Regulatory aspects on the use of recycled plastics material

Informal documents: INF.6 (Belgium),
INF.26 (ICCR, ICIBCA, ICPP) and
INF.42 (United Kingdom)

66. The Sub-Committee noted the feedback by some experts in informal documents INF.26 and INF.42 on the regulatory aspects on the use of recycled plastics material in informal document INF.6. The expert from Germany mentioned that some manufacturers of recycled plastics material indicate that their products are not appropriate for "highly regulated applications". The expert from Belgium added that there is not yet enough data on the experience with recycled plastics material and that the trust in quality assurance management of manufacturers is not sufficient to ensure safe transport of dangerous goods. He volunteered to organise, if deemed appropriate, an intersessional meeting to further discuss this subject and to report back to the Sub-Committee.

67. The Chair invited all delegates to share their comments on the questions raised by Belgium in paragraph 14 of informal document INF.6 as well as their interest to participate in the intersessional meeting. The Sub-Committee agreed to resume discussion on the subject at its next session.

C. Portable tanks

1. Interpretation of 6.7.2.19.5 and 6.7.3.15.5 on waiving the internal examination of portable tanks

Document: ST/SG/AC.10/C.3/2021/5 (Germany)

68. The proposal by Germany received divided opinions on the need for amendments and the two proposed options, as both interpretation options are valid within the current regulations. Most delegations underlined the need to clarify the wording of "transport of a single substance". The Sub-Committee agreed to continue discussion on this subject at the next session on the basis of a revised document by Germany.

2. Inclusion of the new section 6.9.3 “Requirements for design, construction, inspection and testing of fibre reinforced plastic (FRP) valves, relief devices and manholes for portable tanks”

Document: ST/SG/AC.10/C.3/2021/8 (Russian Federation)

Informal documents: INF.3, INF.41 and INF.47 (Russian Federation)

69. The Sub-Committee welcomed the initiative by the Russian Federation to develop provisions on service equipment for FRP portable tanks and preferred to move forward with a new informal working group to further consider the proposed amendments to Chapter 6.9.

70. The Sub-Committee acknowledged that the existing Working Group on FRP portable tanks had concluded its work under the current mandate. The Chair thanked the group members for the huge efforts done resulting in new specifications in the Model Regulations on FRP portable tanks and also Mr. Steven Webb (United States of America) for leading the work of the FRP working group over the last two biennia.

71. Following the discussion, the expert from the Russian Federation submitted in informal document INF.47 a first draft of the terms of reference for the new informal working group.

72. The Sub-Committee accepted the offer of the expert from the Russian Federation to lead the new informal working group on FRP service equipment for portable tanks. The Sub-Committee adopted the terms of reference of the new group as reflected in informal document INF.47.

3. Proposed amendments to Chapter 6.7 of the Model Regulations

Document: ST/SG/AC.10/C.3/2021/9 (IDGCA)

73. The experts who spoke did not endorse the insertion of a definition of "tank container" and preferred to only update the reference to the ISO standard for tank container. The Sub-Committee agreed on the need to clarify on how to move forward with the current text in 6.7.2.18.1 on portable tanks. The representative of IDGCA volunteered to prepare a more detailed proposal for consideration at the next session.

4. Resilience of fibre-reinforced plastics (FRP) portable tanks

Document: ST/SG/AC.10/C.3/2021/11 (United Kingdom)

Informal documents: INF.30 (Chair of the informal working group) and INF.46 (Russian Federation)

74. The Sub-Committee noted the comments and concern of the United Kingdom that the new provisions in Chapter 6.9 on fibre-reinforced plastics (FRP) portable tanks do not require the resilience of such tanks to damage in impact situations to be equivalent to that of

conventional metallic portable tanks. The United Kingdom invited other experts of a similar opinion to develop proposals concerning the resilience of FRP portable tanks.

75. The Sub-Committee welcomed informal document INF.30 on the comments of the informal working group on FRP portable tanks, which met virtually on 2 June 2021 under the chairmanship of Mr. Webb. The Sub-Committee adopted the proposed amendments as a corrigendum to the twenty-second revised edition of the Model Regulations and requested the secretariat to go forward with its publications in near future.

76. Following the discussion, the expert from the Russian Federation submitted in informal document INF.46 some information on fire resistance testing and resilience of FRP portable tanks.

5. Introduction of a requirement to provide an equivalent level of safety for the shell of a fibre reinforced plastics portable tank (Chapter 6.9) to that currently required for a metallic portable tank (Chapter 6.7)

Document: ST/SG/AC.10/C.3/2021/24 (ITCO)

77. Some experts were of the opinion that the "minimum equivalent thickness" needs to be further discussed and that the referenced test method according to standard EN 13095 (originating from TE25(c) of RID 21) is inappropriate. The Sub-Committee welcomed the offer by the representative of ITCO to prepare, together with interested parties, an updated proposal for the next session.

D. Other miscellaneous proposals

1. Inclusion of a note to 1.1.1.7 to ensure consistent interpretation

Document: ST/SG/AC.10/C.3/2021/2 (United Kingdom)

78. The Sub-Committee adopted the proposed note to 1.1.1.7 of the Model Regulations (see annex).

2. Amendment to 2.0.5.2 – Classification of articles containing prototype or small production run lithium batteries

Document: ST/SG/AC.10/C.3/2021/23 (IATA)

79. Most experts did support the intent of the proposal but noted that the amendments need further clarifications on the precedence of classification and the test requirements. The Sub-Committee agreed to resume consideration at its forthcoming session based on a revised document by IATA.

3. Interpretation problem in ADR 7.5.2.3

Document: ST/SG/AC.10/C.3/2021/25 (COSTHA)

Informal documents: INF.13 (COSTHA) and
INF.23 (EWG)

80. The Sub-Committee noted the general consensus of the EWG on the text proposed in ST/SG/AC.10/C.3/2021/25 and their intention to further clarify the case of mixed loading when carried on one vehicle but within separate closed containers. The representative of COSTHA volunteered to prepare a revised proposal for the next session, taking into account the future guidance of the EWG.

4. Editorial amendments

Document: ST/SG/AC.10/C.3/2021/29 (Secretariat)

81. The Sub-Committee adopted the proposed amendments to the Model Regulations, except the amendments to 6.2.1.5.4 (see annex). On the question regarding 1.2.1, it was noted that the text originated from ISO 3807:2013 and it was decided to align both languages with the wording used in the standard. On the question regarding P200, it was decided to use the word "absolute" without abbreviation. On the amendment to 6.2.1.5.4, arguments were made for both options. The Sub-Committee decided to use the term "weight" in both English and French for the moment and invited experts to reconsider, if needed, alternative wordings in a future session. The Sub-Committee also adopted a correction to figure 33.2.4.1 in the Manual of Test and Criteria.

5. Proposal for the establishment of an Informal Working Group on Quality

Document: ST/SG/AC.10/C.3/2021/30 (IDGCA)

Informal documents: INF.18 and INF.37 (IDGCA)

82. Most of the experts who spoke felt that there is currently no need to set up an informal working group on quality. On the concept of "virtual presence" in the framework of audits and inspections, the Sub-Committee agreed that these practices should be considered as special cases or exemptions, subject to the decision of the competent authorities. The Sub-Committee confirmed that the requirements on quality assurance shall be considered as mandatory. It was emphasized that this was crucial for the adoption of the provisions of the new Chapter 6.9 and also those of Chapter 6.2.

6. Rolling hoops requirement for steel drums - 6.1.4.1.4

Informal documents: INF.11 (Canada) and
INF.31 (ICDM)

83. The Sub-Committee noted a general opinion that rolling hoops facilitate the handling of drums and do not consider a safety issue. It was recalled that there was no intent to consider the provisions of 6.1.4.1.4 in the Model Regulations as a mandatory requirement. The expert from Canada and the representative of ICDM proposed to jointly work on a revised proposal for the next session.

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

Informal document: INF.16 (IMO)

84. The Sub-Committee noted the outcome of the thirty-fourth 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 proposal to replace "and" by "or" in paragraph 12 of informal document INF.16, it was noted that this amendment was already discussed in the past in relation with the use of radioactive designs. Thus, the IAEA was invited to confirm the proposed amendment.

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

85. 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.29 (RPMASA, ICPP)

86. Some expert did support the intent of informal document INF.29 to add explanatory wording to the Guiding Principles but indicated that clarifications were needed and that some intersessional work should be carried out. The Chair invited all interested experts to send their comments to the representative of RPMASA. The Sub-Committee agreed to continue discussion at the next session on the basis of an updated document.

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

A. Testing of oxidizing substances

87. 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

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

C. Miscellaneous

Informal document: INF.34 (RPMASA)

89. The Sub-Committee felt that there was no need to insert in the Model Regulations a definition of "toxic". It was noted that toxic endpoints were clearly defined by classification criteria and that inserting a generic definition could create confusion and extend the scope to substances that do not meet that criteria. Some experts suggested that training and capacity building could help addressing the problem raised.

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

Informal document: INF.19 (United States of America)

90. The expert from the United States of America reported on the outcome of the informal discussion on informal documents INF.19 and INF.20 which took place during the lunchtime meeting held remotely on Thursday, 1 July 2021. The Sub-Committee noted general support for the concept of unified interpretations and the procedures. It was agreed to continue discussion on this subject at its next session.

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

Informal document: INF.28 (RPMASA)

91. The Sub-Committee recalled the decision at the last session to insert this new item on their programme of work and welcomed the information by RPMASA on the status of dangerous goods regulations and mandatory training in South Africa.

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

Informal document: INF.20 (United States of America)

92. The Sub-Committee recognized the importance of such safety training and capacity building on dangerous goods. It was agreed to resume work on this subject at the next session, taking into account the comments received during the informal discussion (see para. 90 above).

XVI. Other business (agenda item 14)

A. Progress report on South Africa's AN Task Group response to the August 2020 Beirut Port catastrophic explosion of ammonium nitrate

Informal document: INF.27 (RPMASA)

93. 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 expert from France stated that a report on risk management related to the presence of ammonium nitrate in harbours and maritime ports was recently published at: http://www.cgedd.developpement-durable.gouv.fr/IMG/pdf/013535-p_rapport_public_cle051f41.pdf.

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

Informal document: INF.43 (Secretariat)

94. The Sub-Committee noted the information by the secretariat of the UNECE Convention on the Transboundary Effects of Industrial Accidents and their intention to organise a seminar on 14 December 2021 on the lessons learned, experiences and good practices of ammonium nitrate storage and handling, and related accident prevention, preparedness and response. All delegations were invited to participate in the seminar and to encourage participation by colleagues and other interested stakeholders.

95. The following delegates announced their interest to contribute to that event: Netherlands, Spain, AEISG, Fertilizers Europe, IME and RPMASA.

C. Transport Community

96. The representative of Transport Community presented her international governmental organisation in the field of mobility and transport (<https://www.transport-community.org/>). It was established by a treaty signed between the European Union and six South East European Parties. According to the ECOSOC rules of procedures they may participate in the activities of the Committee of Experts and its sub-committees on matters related to GHS and TDG. The Sub-Committee welcomed their participation in and contributions to the future sessions.

D. Meeting dates for the fifty-ninth session

97. Pending the outcome of the discussions on the planning at UNECE level, the Sub-Committee noted the meeting dates and document submission deadlines for its fifty-ninth session as follows:

- Meeting dates: From 29 November to 8 December 2021;
- Deadline for submission of official documents: 6 September 2021 (for official documents submitted for consideration by the TDG Sub-Committee).

E. Tribute to Mrs. Gunnarsdottir (Netherlands) and Mr. Sigrist (Cefic)

98. Learning that Mr. Erwin Sigrist will retire in November 2021 and will no longer attend future sessions, the Sub-Committee thanked him for his contributions and wished him a long and happy retirement. The Sub-Committee also noted that Mrs. Sjöfn Gunnarsdottir will take on new responsibilities and, therefore, will no longer attend future sessions. It acknowledged her contributions over a long period and wished her all the best for her future activities.

XVII. Adoption of the report (agenda item 15)

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

I. 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)

Chapter 1.1

1.1.1.7 At the end, add a new note to read as follows:

“NOTE: A standard provides details on how to meet the provisions of these Regulations and may include requirements in addition to those set out in these Regulations.”

(Reference document: ST/SG/AC.10/C.3/2021/2)

Chapter 2.4

2.4.2.3.2.3 Replace “The formulations not listed in this provision” by “The formulations not listed in this sub-section”.

(Reference document: ST/SG/AC.10/C.3/2021/29)

Chapter 2.5

2.5.3.2.4 Replace “The formulations not listed in this provision” by “The formulations not listed in this sub-section”.

(Reference document: ST/SG/AC.10/C.3/2021/29)

Chapter 3.2, dangerous goods list

For UN Nos. 0030, 0255, 0456, 0511, 0512 and 0513, in column (6), add “399”.

(Reference document: informal document INF.48)

For UN 1010, in column (2), replace “40 %” by “20 %” [and in column (6), add “XXX”].

(Reference document: ST/SG/AC.10/C.3/2021/22, as amended by informal document INF.44)

For UN 2807, in column (5), delete “III”.

(Reference document: ST/SG/AC.10/C.3/2021/18)

Chapter 3.3

SP 379 Replace “ISO 11114-1:2012 + A1:2017” by “ISO 11114-1:2020”.

(Reference document: ST/SG/AC.10/C.3/2021/10)

SP 396 (f) Replace “and are marked” by “and marked”.

(Reference document: ST/SG/AC.10/C.3/2021/29)

Add the following new special provisions:

“399 For articles that meet the definition for DETONATORS, ELECTRONIC as described in Appendix B and assigned to UN Nos. 0511, 0512 and 0513, the entries for DETONATORS, ELECTRIC (UN Nos. 0030, 0255 and 0456) may continue to be used until 30 June 2025.”

(Reference document: informal document INF.48, as amended)

[“XXX Substances transported under this entry shall have a vapour pressure at 70 °C not exceeding 1.1 MPa (11 bar) and a density at 50 °C not lower than 0.525 kg/l.”]

(Reference document: ST/SG/AC.10/C.3/2021/22, as amended by informal document INF.44)

Alphabetical index

For “BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, containing more than 40 % butadienes”, replace “40 %” by “20 %”.

(Reference document: ST/SG/AC.10/C.3/2021/22, as amended by informal document INF.44, consequential amendment)

Chapter 4.1

4.1.4.1 P200 In (4), replace “ISO 13088:2011” by “ISO 13088:2011 + Amd.1:2020”.

(Reference document: ST/SG/AC.10/C.3/2021/10)

4.1.4.1, P200 In (5), special packing provision z, paragraphs 8 and 9, replace “(abs.)” by “(absolute)”.

(Reference document: ST/SG/AC.10/C.3/2021/29)

4.1.4.1 P200 In table 2, for the third entry of UN 1010, in the column “Name and description”, replace “40 %” by “20 %”.

(Reference document: ST/SG/AC.10/C.3/2021/22, as amended by informal document INF.44)

4.1.4.1 P206 In special provision PP89, replace “ISO 11118:1999” by “clause 1 of ISO 11118:2015 + Amd 1:2019”.

(Reference document: ST/SG/AC.10/C.3/2021/10, as amended by informal document INF.39)

4.1.4.1 P908 In 5, replace “Non-combustibility” by “The non-combustibility of the thermal insulation material and the cushioning material”.

(Reference document: ST/SG/AC.10/C.3/2021/20, as amended)

4.1.4.1 P910 In (1)(e), replace “Non-combustibility” by “The non-combustibility of the thermal insulation material and the cushioning material”.

(Reference document: ST/SG/AC.10/C.3/2021/20, as amended)

4.1.4.1 P910 In (2)(d), replace “Non-combustibility” by “The non-combustibility of the cushioning material”.

(Reference document: ST/SG/AC.10/C.3/2021/20, as amended)

4.1.4.2, IBC520 Replace “the formulations not listed in 2.4.2.3.2.3 and 2.5.3.2.4” by “the formulations not listed in 2.4.2.3.2.3 or 2.5.3.2.4”.

(Reference document: ST/SG/AC.10/C.3/2021/29)

4.1.4.3 LP904 In 5, replace “Non-combustibility” by “The non-combustibility of the thermal insulation material and the cushioning material”.

(Reference document: ST/SG/AC.10/C.3/2021/20, as amended)

4.1.4.3 LP905 In (1)(e), replace “Non-combustibility” by “The non-combustibility of the thermal insulation material and the cushioning material”.

(Reference document: ST/SG/AC.10/C.3/2021/20, as amended)

4.1.4.3 LP905 In (2)(d), replace “Non-combustibility” by “The non-combustibility of the cushioning material”.

(Reference document: *ST/SG/AC.10/C.3/2021/20, as amended*)

4.1.6.1.2 Replace “ISO 11114-1:2012 + A1:2017” by “ISO 11114-1:2020”.

(Reference document: *ST/SG/AC.10/C.3/2021/10*)

4.1.6.1.8 The amendments to (a), (d) and (e) do not apply to the English version. Amend (b) and (c) to read as follows:

“(b) Valves are protected by caps or guards. Caps shall possess vent-holes of sufficient cross-sectional area to evacuate the gas if leakage occurs at the valves;

(c) Valves are protected by shrouds or permanent protective attachments;”

Amend the paragraph after the indents to read as follows:

“For pressure receptacles with valves as described in (b) the requirements of ISO 11117:1998, ISO 11117:2008 + Cor 1:2009 or ISO 11117:2019 shall be met. Requirements for shrouds and permanent protection attachments used as valve protection under (c), are given in the relevant pressure receptacle shell design standards, see 6.2.2.1. Valves with inherent protection used for refillable pressure receptacles shall meet the requirements of clause 4.6.2 of ISO 10297:2006 or clause 5.5.2 of ISO 10297:2014 or clause 5.5.2 of ISO 10297:2014 + A1:2017, or in case of self-closing valves, of clause 5.4.2 of ISO 17879:2017. For valves with inherent protection used for non-refillable cylinders, the requirements of clause 9.2.5 of ISO 11118:2015 or of clause 9.2.5 of ISO 11118:2015 + A1:2019 shall be met.

(Reference document: *ST/SG/AC.10/C.3/2021/6, as amended by informal document INF.5*)

Chapter 4.2

4.2.5.2.6, T23 Replace “the formulations not listed in 2.4.2.3.2.3 and 2.5.3.2.4” by “the formulations not listed in 2.4.2.3.2.3 or 2.5.3.2.4”.

(Reference document: *ST/SG/AC.10/C.3/2021/29*)

Chapter 6.1

6.1.4.12.1 In the second sentence, replace “ISO 535:1991” by “ISO 535:2014”.

(Reference document: *informal document INF.4*)

Chapter 6.2

6.2.1.5.2 After (p), replace “closed cryogenic pressure receptacles” by “closed cryogenic receptacles”.

(Reference document: *ST/SG/AC.10/C.3/2021/29*)

6.2.1.5.4 The amendment does not apply to the English version.

(Reference document: *ST/SG/AC.10/C.3/2021/29, as amended*)

6.2.1.6.1 (d) In note 2, replace “ISO 16148:2016” by “ISO 16148:2016 + Amd.1:2020”.

(Reference document: *ST/SG/AC.10/C.3/2021/10, as amended by informal document INF.39*)

6.2.2.2 Replace “ISO 11114-1:2012 + A1:2017” by “ISO 11114-1:2020”.

(Reference document: *ST/SG/AC.10/C.3/2021/10*)

6.2.2.7.3 (l) (ii) After “porous material”, add “(e.g.: name or trademark)”.

(Reference document: ST/SG/AC.10/C.3/2021/29)

6.2.2.7.4 (p) Replace “ISO 11114-1:2012” by “ISO 11114-1:2020”.

(Reference document: ST/SG/AC.10/C.3/2021/10)

6.2.2.9.2 (j) Replace “ISO 11114-1:2012” by “ISO 11114-1:2020”.

(Reference document: ST/SG/AC.10/C.3/2021/10)

Chapter 6.5

6.5.5.4.16 In the second sentence, replace “ISO 535:1991” by “ISO 535:2014”.

(Reference document: informal document INF.4)

6.5.5.5.3 In the second sentence, replace “ISO 535:1991” by “ISO 535:2014”.

(Reference document: informal document INF.4)

Chapter 6.6

6.6.4.4.1 Replace “ISO 535:1991” by “ISO 535:2014”.

(Reference document: informal document INF.4)

6.6.5.3.2.4 (a) Replace “Metal and rigid plastics” by “All types of large packagings other than flexible”.

(Reference document: ST/SG/AC.10/C.3/2021/4)

Chapter 6.7

6.7.5.2.4 (a) Replace “ISO 11114-1:2012 + A1:2017” by “ISO 11114-1:2020”.

(Reference document: ST/SG/AC.10/C.3/2021/10)

Chapter 6.9

6.9.2.2.3.14.1 Delete “of Class 3”.

(Reference document: ST/SG/AC.10/C.3/2021/29)

II. Corrections to the seventh revised edition of the Manual of Tests and Criteria (ST/SG/AC.10/11/Rev.7 and Amend.1)

Section 16, 16.6.1.4.8, definition of term E under the equation

For joules read kJ

(Reference document: ST/SG/AC.10/C.3/2021/19, option 2 and informal document INF.23, annex II)

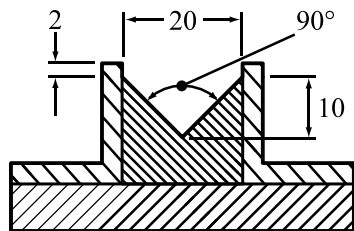
Section 16, 16.6.1.4.8, definition of term T under the equation

For T = read t =

(Reference document: ST/SG/AC.10/C.3/2021/19, option 2 and informal document INF.23, annex II)

Section 33, figure 33.2.4.1, inset A

For the existing inset A, *substitute*



A

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)

Chapter 1.2, 1.2.1, definition of “Portable tank”, last sentence, after “non-metallic tanks”

Insert (except FRP portable tanks, see Chapter 6.9)

(Reference document: informal document INF.30, proposal 5)

Chapter 1.2, 1.2.1, definition of “Working pressure”, sub-paragraph (b)

The correction does not apply to the English text.

(Reference document: ST/SG/AC.10/C.3/2021/29 and standard ISO 3807:2013)

Chapter 1.5, 1.5.2.5, first sentence

For persons read people

(Reference document: ST/SG/AC.10/C.3/2021/29)

Chapter 2.5, 2.5.3.2.4, entry for “ISOPROPYL sec-BUTYL PEROXYDICARBONATE+DI-sec-BUTYL PEROXYDICARBONATE+DI-ISOPROPYL PEROXYDICARBONATE”, column “Concentration”

For $\leq 32 + \leq 15 - 18 \leq 12 - 15$ *read* $\leq 32 + \leq 15 - 18 + \leq 12 - 15$

(Reference document: ST/SG/AC.10/C.3/2021/29)

Chapter 4.1, 4.1.3.3, last sentence

For packages read packagings

(Reference document: ST/SG/AC.10/C.3/2021/29)

Chapter 6.2, 6.2.1.6.1 (d), Note 3

For the existing text, *substitute*

NOTE 3: The check of internal conditions of 6.2.1.6.1 (b) and the hydraulic pressure test of 6.2.1.6.1 (d) may be replaced by ultrasonic examination carried out in accordance with ISO 18119:2018 for seamless steel and seamless aluminium alloy cylinder shells. For a transitional period until 31 December 2024 the standard ISO 10461:2005 +A1:2006 may be used for seamless aluminium alloy cylinder shells and ISO 6406:2005 may be used for seamless steel cylinder shells for this same purpose.

(Reference document: ST/SG/AC.10/C.3/2021/29)

Chapter 6.5, 6.5.6.3.2

For 6.5.5.4.9 *read* 6.5.5.4.8

(Reference document: ST/SG/AC.10/C.3/2021/29)

Chapter 6.9, 6.9.2.1, definition of “FRP shell”

Delete storage and

(Reference document: informal document INF.30, proposal 1)

Chapter 6.9, 6.9.2.1, definition of “FRP tank”

For the existing text, *substitute*

FRP tank means a portable tank constructed with an FRP shell and heads, service equipment, safety relief devices and other installed equipment;

(Reference document: informal document INF.30, proposal 2)

Chapter 6.9, 6.9.2.2.3.4, introductory sentence

For functions *read* elements

(Reference document: informal document INF.30, proposal 3)

Chapter 6.9, 6.9.2.2.3.4, Note

For layers *read* elements

(Reference document: informal document INF.30, proposal 3)

Chapter 6.9, 6.9.2.2.3.5, first sentence

For internal liner *read* liner

(Reference document: informal document INF.30, proposal 3)

Chapter 6.9, 6.9.2.2.3.5, last sentence

For internal liner *read* liner

(Reference document: informal document INF.30, proposal 3)

Chapter 6.9, 6.9.2.2.3.7, second sentence

For Furthermore, welded liners *read* Welded liners

(Reference document: informal document INF.30, proposal 4)

Chapter 6.9, 6.9.2.3.4, indent K₄, sub-indent 1.0

For 6.9.2.7.1.2 (i) *read* 6.9.2.7.1.2 (h)

(Reference document: ST/SG/AC.10/C.3/2021/29)

Chapter 6.9, 6.9.2.7.1.2 (e)

For 6.9.2.2.4 *read* 6.9.2.2.3.2

(Reference document: ST/SG/AC.10/C.3/2021/29)

Chapter 6.9, 6.9.2.7.1.2 (f)

For 6.9.2.2.4 *read* 6.9.2.2.3.2

(Reference document: ST/SG/AC.10/C.3/2021/29)