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## 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 Globally Harmonized  
System of Classification and Labelling of Chemicals

Thirty-fifth session  
Geneva, 4-6 July 2018

### Report of the Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals on its thirty-fifth session

held in Geneva from 4 to 6 July 2018

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## I. Attendance

1. The Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals held its thirty-fifth session from 4 July (p.m.) to 6 July (a.m.) 2018, with Ms. Maureen Ruskin (United States of America) as Chairperson and Mr. Robin Foster (United Kingdom) as Vice-Chairperson.
2. Experts from the following countries took part in the session: Australia, Austria, Belgium, Brazil, Canada, China, France, Germany, Italy, Japan, Netherlands, New Zealand, Norway, Poland, Qatar, Republic of Korea, Russian Federation, South Africa, Sweden, United Kingdom and United States of America.
3. Under rule 72 of the rules of procedure of the Economic and Social Council, observers from Romania and Switzerland also took part.
4. Representatives of the World Health Organization (WHO), and the United Nations Institute for Training and Research (UNITAR) were also present.
5. The following intergovernmental organization was also represented: European Union and Organisation for Economic Cooperation and Development (OECD).
6. Representatives of the following non-governmental organizations took part in the discussion of items of concern to their organizations: American Cleaning Institute (ACI); Association des Fabricants Européens de Munitions de Sport (AFEMS), Australian Explosives Industry and Safety Group Incorporated (AEISG); Compressed Gas Association (CGA); Croplife International; Dangerous Goods Advisory Council (DGAC); European Association of Automotive Suppliers (CLEPA); European Chemical Industry Council (CEFIC); European Industrial Gases Association (EIGA), Federation of European Aerosol Associations (FEA); International Association for Soaps, Detergents and Maintenance Products (AISE); International Confederation of Container Reconditioners (ICCR); International Council of Chemical Associations (ICCA); International Council on Mining and Metals (ICMM), International Paint and Printing Ink Council (IPPIC); International Petroleum Industry Environmental Conservation Association (IPIECA); Institute of Makers of Explosives (IME); Responsible Packaging Management Association of Southern Africa (RPMASA); and Sporting Arms and Ammunition Manufacturers' Institute (SAAMI).

## II. Adoption of the agenda (agenda item 1)

*Documents:* ST/SG/AC.10/C.4/69 (Provisional agenda)  
ST/SG/AC.10/C.4/69/Add.1 (List of documents and annotations)

*Informal documents:* INF.1, INF.2 (List of documents)  
INF.11 (Provisional timetable)

7. The Sub-Committee adopted the provisional agenda prepared by the secretariat after amending it to take account of informal documents INF.1 to INF.32.

### **III. Joint work with the Sub-Committee of Experts on the Transport of Dangerous Goods (TDG Sub-Committee) (agenda item 2)**

#### **A. Use of the Manual of Tests and Criteria in the context of the GHS**

*Document:* ST/SG/AC.10/C.4/2018/1 (Chairman of the Working Group on Explosives of the TDG Sub-Committee on behalf of the Working Group)

*Informal documents:* INF.3, INF.4 and INF.5 (Chairman of the Working Group on Explosives)  
INF.29 (Secretariat)

8. The Sub-Committee noted that this issue had been discussed in the Working Group on Explosives of the TDG Sub-Committee and then in the joint session of the TDG and the GHS sub-committees (see ST/SG/AC.10/C.3/106, paragraph 176).

9. The Sub-Committee welcomed the progress made and confirmed the amendments to sections 1 and 10 of the Manual of Tests and Criteria adopted by the TDG Sub-Committee.

10. The Sub-Committee noted that the amendments to sections 20 to 28 and sections 30 to 38 will be presented for adoption at the next session.

#### **B. Updating of references to ISO 10156**

*Document:* ST/SG/AC.10/C.4/2018/2 (EIGA)

*Informal document:* INF.29 (Secretariat)

11. During the joint session of the TDG and the GHS sub-committees, amendments to update the reference to ISO 10156 were adopted for the Model Regulations and amendments to update this reference in the GHS were noted, pending endorsement by the GHS Sub-Committee (see ST/SG/AC.10/C.3/106, paragraph 166).

12. The Sub-Committee adopted the amendments proposed in ST/SG/AC.10/C.4/2018/2 as amended in informal document INF.29, item 4 (see annex I).

#### **C. Classification of aerosols and chemicals under pressure**

*Document:* ST/SG/AC.10/C.4/2018/3 (CEFIC, EIGA)  
ST/SG/AC.10/C.4/2018/7 (FEA)

*Informal documents:* INF.17 (Germany)  
INF.29 (Secretariat)

13. At the joint session of the TDG and GHS sub-committees, there was general support for introducing provisions addressing chemicals under pressure in the GHS and it was agreed that CEFIC and EIGA would lead an intersessional work to revise the proposal in the light of the comments made and submit a new document for consideration by both sub-committees at their next sessions (see ST/SG/AC.10/C.3/106, paragraphs 168-172).

14. The Sub-Committee reiterated its support in principle for the inclusion of provisions for the classification of chemicals under pressure in Chapter 2.3 of the GHS during this biennium and looked forward to a revised proposal to be presented at the next sessions of both sub-committees. The Sub-committee also noted concerns about the differences in definitions in the Model Regulations and the GHS.

## **D. Revised OECD Test Guideline 431 allowing sub-categorization for skin corrosion**

*Document:* ST/SG/AC.10/C.3/2018/30 (European Union)

*Informal documents:* INF.34 (CEFIC)  
INF.28 (DGAC)  
INF.29 (Secretariat)

15. After discussion in the joint session of the TDG and GHS sub-committees (see ST/SG/AC.10/C.3/106, paragraph 167), the Sub-Committee noted that the representative of the European Union will present a revised proposal in the light of the comments received.

## **E. Desensitized explosives**

*Informal document:* INF.6 (CEFIC)  
INF.29 (Secretariat)

16. The Sub-Committee noted the outcome of the discussions on informal document INF.6 held in the Working Group on Explosives of the TDG Sub-Committee and in the TDG Sub-Committee.

17. The Sub-Committee noted that the TDG Sub-Committee adopted the proposed amendments to the Manual of Tests and Criteria with a modification pending confirmation at its next session after further review by the experts (see ST/SG/AC.10/C.3/106, paragraph 21).

## **F. Classification of physical hazards according to the GHS**

*Informal document:* INF.13 (Germany)  
INF.29 (Secretariat)

18. The expert from Germany recalled that she had presented a document on combinations of physical hazard classes at the previous session and that, as requested by the Sub-Committee at that time, she now presented a step-wise approach for further work on this issue and proposed terms of reference for an informal working group to take this forward.

19. The Sub-Committee noted that informal document INF.13 had been discussed during the joint session of the TDG and GHS sub-committees (see ST/SG/AC.10/C.3/106, paragraphs 173-175).

20. Most experts found this work interesting and guidance on classification was welcomed. Several experts were concerned that this may not be straight forward and would need to be looked at carefully for each hazard combination. The Sub-Committee noted that this work could be included in its programme of work for the next biennium.

21. The expert from Germany was invited to refine the terms of reference considering the comments made at this session and during the joint session of the TDG and GHS sub-committees. Delegations wishing to provide further inputs for drafting these terms of reference were invited to contact the expert from Germany.

## **IV. Classification criteria and related hazard communication (agenda item 3)**

### **A. Work of the Sub-Committee of Experts on the Transport of Dangerous Goods (TDG) on matters of interest to the GHS Sub-Committee**

*Document:* ST/SG/AC.10/C.4/2018/8 (France)

*Informal documents:* INF.19 (France)  
INF.29, item 1 (Secretariat)

22. The Sub-Committee noted the outcome of the discussions in the TDG Sub-Committee on the proposal in ST/SG/AC.10/C.4/2018/8 to amend the tests for oxidizing liquids and solids consequently to the replacement of cellulose and as regards the proposal for further work in informal document INF.19, as reflected in informal document INF.29, item 1.

23. The expert from France noted the comments made and invited the experts who wish to do so to send him their additional comments so that they could be considered in this revised proposal for the next session.

### **B. Review of Chapter 2.1**

*Document:* ST/SG/AC.10/C.4/2018/7 (Sweden)

*Informal documents:* INF.10 (Sweden)  
INF.15 (United States, IME, SAAMI)  
INF.16 (Sweden)  
INF.29, item 1 (Secretariat)  
INF.30 (Sweden)

24. The Sub-Committee noted the progress achieved by the informal correspondence group since the last session, as contained in informal document INF.16. It was also noted that the group had met in parallel to the fifty-third session of the TDG Sub-Committee, jointly with the Working Group on Explosives.

25. This issue was also discussed during the joint session of the TDG and GHS sub-committees (see ST/SG/AC.10/C.3/106, paragraphs 163-165) after which the informal working group met again in the margins of the GHS Sub-Committee session, as reflected in informal document INF.30.

26. The expert from Sweden presented the outcome of the discussions in these meetings.

27. The Sub-Committee welcomed the progress made while recognising that there were still ongoing discussions on hazard communication and other issues. The Sub-Committee also noted that an attempt to finalise the classification criteria will be made with the aim of submitting a proposal to the next session. To complete the task, however, the work would have to be continued into the next biennium.

### **C. Dust explosion hazards**

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

## D. Use of non-animal testing methods for classification of health hazards

*Informal document:* INF.25 (United Kingdom, Netherlands)

29. The Sub-Committee noted the report on the status of the work of the informal working group on the use of non-animal testing methods for classification of health hazards in informal document INF.25 and noted the progress made by the informal working group in developing amendments to Chapter 3.2.

30. The expert from the Netherlands indicated that the group was currently working on the details of new guidance at the end of the chapter. The group would finalise its work with a view to submitting a working document on amendments to Chapter 3.2 for adoption by the Sub-Committee in this biennium.

31. Further, activities planned for the next biennium include updates to the chapters on the hazard classes “serious eye damage/eye irritation” and “skin sensitisation” in line with the mandate of the informal working group.

## E. Practical classification issue

*Informal document:* INF.21 (United States of America on behalf of the informal correspondence group on Practical Classification Issues)

32. The Sub-Committee noted that the informal working group had addressed items (b), (d) and (e) from its programme of work<sup>1</sup> with the following outcome.

33. On item (b), the group reached agreement following some minor editorial revisions, on the proposal presented in informal document INF.21 to provide consistency within chapters 3.8 and 3.9 that the criteria be applied independently. The informal working group plans to present the proposal on this issue as a working document for the next session.

34. Three examples were presented to illustrate how to interpret both single and repeated exposure data when interpreting the statements in Chapter 3.8 and Chapter 3.9 that effects covered in other health hazard chapters are not included in these chapters. The informal working group provided initial feedback on these examples but felt that more time was necessary to review the examples. The group plans to further progress this item before next session.

35. On item (d), a thought starter was presented that provided proposed amendments to the effects on or via lactation hazard category criteria and decision logics. The group had differing opinions on the editorial/grammatical issues within the criteria. In addition, there was no support to modify or add an additional hazard statement for effects on or via lactation, since from a practical point of view there is no way to adequately distinguish between the two effects. The group may revisit the editorial amendments to the text of the criteria later.

36. On item (e), a thought starter was presented by AISE on the application of bridging principles for mixtures classified as non-hazardous. There was general agreement within the informal working group that application of the bridging principles to mixtures not classified as hazardous based on an internationally recognized test was appropriate and possible. However, the group could not reach agreement on the proposed clarifying text to be included in the GHS. In addition, AISE also presented a thought starter on the definition

<sup>1</sup> Refer to informal document INF.39 (thirty-second session) available at: <http://www.unece.org/fileadmin/DAM/trans/doc/2016/dgac10c4/UN-SCEGHS-32-INF39.pdf>

of ingredient in the context of the bridging principles. Again, the group agreed in principle that the term “ingredient”, in the framework of the implementation of the bridging principles, can refer both to a substance and/or a mixture. However, the group felt that the proposed clarifying text needed more consideration. The group agreed to further progress these issues prior to the next session.

## **F. Aspiration hazard**

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

## **G. Nanomaterials**

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

## **H. Other issues**

### **1. Addressing risk management in the GHS**

*Informal document:* INF.22 (Australia)

39. There was some support for adding in GHS the information shown in the note proposed in informal document INF.22.

40. The Sub-Committee noted the proposal from the expert from the United States of America to place this text in 1.1.2.6 instead of repeating the note wherever risk management information is indicated in GHS.

41. The experts from Australia and the United States of America were invited to submit a revised proposal for adoption at the next session.

### **2. Amendment of the guidance on calculating specific heats of combustion for composite formulations in Chapter 2.3**

*Document:* ST/SG/AC.10/C.4/2018/12 (Sweden)

42. The Sub-Committee adopted the amendments proposed in ST/SG/AC.10/C.4/2018/12 to be inserted in 2.3.4.2 in Chapter 2.3 of the GHS (see annex I).

43. The Sub-Committee noted that there might be room for improvement for other equations in the GHS.

### **3. Revision of Chapter 2.3**

*Documents:* ST/SG/AC.10/C.4/2018/9 (Canada, FEA)  
ST/SG/AC.10/C.4/2018/11 (except Table 2.3.1) (FEA)

*Informal documents:* INF.17 (Germany)  
INF.26 (United States of America)  
INF.32 (FEA)

44. After first discussion of these documents, the representative of FEA prepared in informal document INF.32 a consolidated version of Chapter 2.3 including the changes proposed in ST/SG/AC.10/C.4/2018/9 as amended in ST/SG/AC.10/C.4/2018/11 (except

Table 2.3.1) and informal documents INF.17 and INF.26. On this basis, the Sub-Committee adopted the corresponding amendments as shown in informal document INF.32 with a further editorial modification to transfer the final “and” from the first indent to the second indent in 2.3.2.1 (see annex I).

## **V. Hazard communication (agenda item 4)**

### **A. Labelling of small packagings**

*Document:* ST/SG/AC.10/C.4/2018/10 (CEFIC on behalf of the informal correspondence group on labelling of small packagings)

45. The Sub-Committee noted that the informal correspondence group had endorsed the example “labelling of sets or kits” in ST/SG/AC.10/C.4/2018/10 with an editorial modification of the footnote on page 3.

46. The informal correspondence group also discussed possible next steps for the work on labelling of small packaging and the preparation of the work programme for the next biennium.

47. During the meeting of the informal correspondence group, it was suggested to address the use of new technologies such as electronic labels and QR codes. The expert from China mentioned a pilot project on this issue.

48. The Chair of the Sub-Committee invited the expert from China to provide a document on this issue for the next session. It was considered that, although this might be particularly relevant for small packagings, the use of these new technologies would potentially cover a wider scope.

49. The Sub-Committee adopted the new examples proposed in ST/SG/AC.10/C.4/2018/10 with the editorial modification to the footnote on page 3 (see annex I). French speaking delegations spotted errors in the French version of the proposal and requested the secretariat to correct these errors in the consolidated list of amendments.

50. The Sub-Committee noted that delegations wishing to develop additional examples for labelling of small packagings were invited to send proposals in writing to the Chair of the informal correspondence group for inclusion in a proposal of program of work for the next biennium that will be discussed at the next session.

### **B. Improvement of annexes 1 to 3 and further rationalization of precautionary statements**

*Informal document:* INF.18 (United Kingdom on behalf of the informal correspondence group on the improvement of annexes 1 to 3 of the GHS)

51. The Sub-Committee noted the significant progress made by the informal working group, including preparation for this session of four working documents and four informal documents.

**1. Precautionary pictograms to reflect the precautionary statement “Keep out reach of children”**

*Document:* ST/SG/AC.10/C.4/2018/5 (United Kingdom on behalf of the informal correspondence group on the improvement of annexes 1 to 3 of the GHS)

52. The Sub-Committee agreed that the proposed AISE and Japan Soap and Detergent Association (JSDA) pictograms had shown a high understanding rate and that they were already in use in some countries and therefore endorsed the addition of these examples in Annex 3, Section 5 of the GHS. The proposal in document ST/SG/AC.10/C.4/2018/5 was adopted (see annex I).

53. Additionally, some experts indicated that additional comprehensibility surveys were still ongoing on other pictograms to reflect the precautionary statement “Keep out reach of children” and could possibly be included in Annex 3 at a future date.

54. The Sub-Committee noted that the informal correspondence group intended to continue its discussions on the use of precautionary pictograms as an alternative to written precautionary statements.

**2. Changes to Annex 3 of GHS to reflect hazard sub-categories**

*Document:* ST/SG/AC.10/C.4/2018/6 (United Kingdom on behalf of the informal correspondence group on the improvement of annexes 1 to 3 of the GHS)

*Informal documents:* INF.7 and INF.31 (United Kingdom on behalf of the informal correspondence group on the improvement of annexes 1 to 3 of the GHS)

55. The Sub-Committee agreed that the proposed changes, as further amended by the informal correspondence group in informal document INF.31, improved the presentation of the precautionary statements with the correct references to hazard categories and sub-categories. The Sub-Committee adopted the amendments proposed in ST/SG/AC.10/C.4/2018/6 as reflected in informal document INF.7 (see annex I) and as amended in informal document INF.31.

**3. Proposed changes to P201 and P202**

*Document:* ST/SG/AC.10/C.4/2018/14 (United Kingdom on behalf of the informal correspondence group on the improvement of annexes 1 to 3 of the GHS)

*Informal documents:* INF.9/Rev.1 and INF.31 (United Kingdom on behalf of the informal correspondence group on the improvement of annexes 1 to 3 of the GHS)

56. The Sub-Committee supported in principle the proposals to merge P201 and P202 as presented in ST/SG/AC.10/C.4/2018/14 and informal document INF.9/Rev.1 and as amended in informal document INF.31. Some delegations indicated that it would be preferable to introduce a new precautionary statement P203 to replace existing P201 and P202 instead of grouping both under P202.

57. Some delegations needed more time to check the final version of these amendments and the Sub-Committee requested that a working document be presented at the next session for adoption.

#### 4. Proposed changes to P310 through P315

- Document:* ST/SG/AC.10/C.4/2018/13 (United Kingdom on behalf of the informal correspondence group on the improvement of annexes 1 to 3 of the GHS)
- Informal document:* INF.8 and INF.31 (United Kingdom on behalf of the informal correspondence group on the improvement of annexes 1 to 3 of the GHS)

58. The Sub-Committee noted that the informal correspondence group had agreed to make further changes to the proposal in ST/SG/AC.10/C.4/2018/13.

59. The expert from United Kingdom withdrew document ST/SG/AC.10/C.4/2018/13. A revised proposal will be submitted at the next session.

#### C. Use of “proportion ranges”: review of paragraph A4.3.3.2.3 in Annex 4

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

#### D. Other issues

##### 1. Correction in Table 3.3.5

*Document:* ST/SG/AC.10/C.4/2018/4 (United Kingdom)

61. The Sub-Committee adopted the correction to Table 3.3.5 in Chapter 3.3 proposed in ST/SG/AC.10/C.4/2018/4 (see annex II).

##### 2. Amendments to Annex 7, examples 1 to 7

*Informal document:* INF.12 (UNITAR)

62. The Sub-Committee took note of the proposed amendments to examples 1 to 7 in Annex 7 of the GHS.

63. There were mixed views on whether the examples of labels in Annex 7 should remain generic or should be more specific and realistic. Some experts felt that a hybrid approach could also be considered. It was recognized that the examples should be updated when changes are adopted to the communication elements.

64. The Sub-Committee felt that more discussion was needed on how to update these examples and noted that work within the informal correspondence group on practical classification issues could be an appropriate way forward.

65. The Sub-Committee noted that the representative of UNITAR intended to present an informal document on this issue at the next session and invited experts to provide him comments.

66. The expert from the United States indicated that paragraph 1.4.10.5.1 now appears to be inconsistently implemented around the world and considered that the GHS should be modified to reflect how competent authorities are implementing this requirement. There were mixed views on whether this was needed. The Sub-Committee considered that this issue should be discussed separately on the basis of a specific proposal.

**3. Hands-on experience with GHS hazard classification for consumer products**

*Informal document:* INF.14 (AISE)

67. The Sub-Committee welcomed the information provided by the representative of AISE about their experience with classification for serious eye damage of some consumer products, such as detergents and maintenance products, based on the GHS additivity approach.

**VI. Implementation of the GHS (agenda item 5)****A. Development of a list of chemicals classified in accordance with the GHS**

*Informal document:* INF.27 (United States of America)

68. Following the discussion at the last session (see ST/SG/AC.10/C.4/68, paragraphs 52-54), the informal working group on assessing the possible development of a list of chemicals classified in accordance with the GHS discussed possible ways forward for this work.

69. The expert from the United States of America requested that feedback be provided to the chair of the informal working group on possible approaches to this work including some listed in paragraph 5 of the informal document or other possible approaches. Several experts thought the approach to conduct further investigation into divergences between existing classification lists including differences in how jurisdictions have implemented the GHS might be a path forward. This could be done before deciding on further steps forward such as the ones proposed in paragraph 5 of the informal document.

70. It was noted that the OECD Global Portal to Information on Chemical Substances (eChemPortal) is a searchable platform for existing lists that are publicly available.

71. The Sub-Committee supported the continuation of work and invited delegations who wish to do so to send further comments to the Chair of the informal working group.

**B. Reports on the status of implementation**

*Informal document:* INF.23 (Australia)

72. The expert from Australia introduced informal document INF.23, drawing the attention of the Sub-Committee to some aspects addressed in the paper, notably the approach taken to the transitional period to implementation and lessons learnt in that process. He also highlighted the creation of the Hazardous Chemicals Information System (HCIS) which contains classifications for some 5600 chemicals. Adoption of the sixth revised edition of the GHS is currently under consideration in Australia.

73. The expert from Australia requested information on plans and timelines for adoption of later revisions of the GHS in other countries and encouraged the Sub-Committee to consider how to best ensure that a coordinated approach to adoption of future editions can be taken.

74. The expert from New Zealand indicated that New Zealand is also currently planning to implement the sixth revised edition of the GHS although the timeline for this has yet to be finalised. He also reported that in December 2017, New Zealand adopted new legislative

instruments ('EPA Notices') for labelling and safety data sheets, based on the fifth revised edition of the GHS. Noting the point made by the expert from Australia that many chemical products are imported (into Australia and New Zealand), he also indicated that the legislative instruments contained provisions that allow acceptance of GHS labels and safety data sheets from specified overseas English language countries, regardless of the GHS version implemented there.

75. The expert from United Kingdom and the representative of the European Union said that there was an ongoing revision of the EC regulation No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP) to transpose both the sixth and seventh revised editions of the GHS. A proposal to implement changes to the Safety Data Sheets in EC Regulation No 1907/2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) is also under development.

76. The expert from Canada indicated that her country was also on the way to transpose the seventh revised edition in their regulations and that the work was expected to be achieved within two years.

77. The expert from the United States indicated that the United States is currently planning to propose an update to its Hazard Communication Standard to align it with the seventh revised edition. This Proposal is scheduled to be published in 2019.

78. The delegations who spoke welcomed the discussion and confirmed that efforts should be made between countries about coordinating the implementation of later editions of the GHS. The Sub-Committee agreed that, as a first step, a template table could be prepared for the countries to fill information on how the GHS is implemented for the purposes of updating the information on the UNECE website. This could include for instance the sectors and building blocks concerned, the applicable editions of GHS, the transitional periods, if any.

### **C. Cooperation with other bodies or international organizations**

*Informal document:* INF.20 (OECD)

79. The Sub-Committee noted with interest that the OECD has recently adopted an updated "Decision-Recommendation on the Co-operative Investigation and Risk Reduction of Chemicals that included Decisions and Recommendations pertaining to the Globally Harmonised System of Classification and Labelling".

### **D. Miscellaneous**

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

## **VII. Development of guidance on the application of GHS criteria (agenda item 6)**

*Informal document:* INF.24 (IPIECA)

81. The Sub-Committee noted that IPIECA was updating its "Guidance on the application of Globally Harmonized System (GHS) Criteria to petroleum substances", which can be found under the guidance tab on the UNECE website. IPIECA welcomed comments on the Guidance by 16 august 2018.

82. The expert from Germany indicated that in the European Union the classification of substances of Unknown or Variable composition, Complex reaction products or Biological materials (UVCBs) and multi-constituent substances for carcinogenic, mutagenic and reprotoxic properties had to be based on the available data on the individual ingredients using cut-off values/concentration limits according to the GHS criteria for classification of mixtures.

## **VIII. Capacity building (agenda item 7)**

83. The Sub-Committee noted UNITAR capacity building efforts to support the GHS and particularly the ongoing projects in Uzbekistan and in the Republic of Guinea.

84. As part of the national project in Uzbekistan, the development of the national GHS implementation strategy was under way, including analysis of legislative and information frameworks for the regulation of chemicals, collection of relevant technical documents, and a situation analysis. One training workshop had taken place with a UNITAR Russian-speaking expert as well as several domestic training sessions. Finalisation of the implementation strategy and the project, as well as possible additional training, was expected by the end of 2018.

85. In the Republic of Guinea, the situation and gap analysis had been completed and drafting of the main implementation strategy was underway. In June 2018 a training workshop was held to advance capacities in the country, with a UNITAR French-speaking expert. Another training workshop, based on the identified needs, was already planned. Both projects would need to be completed by the end of 2018.

86. The Sub-Committee also noted that a new session of the UNITAR's e-Learning course on the GHS would take place from October to December 2018. The Chair invited the representative from UNITAR to inform the Sub-Committee experts when the registration would be open.

## **IX. Other business (agenda item 8)**

### **Submission deadlines**

87. The Sub-Committee noted the deadlines for submission of documents for the next session, as follows:

- Documents submitted to both sub-committees (TDG and GHS): 31 August 2018
- Documents submitted to the GHS Sub-Committee only: 12 September 2018

## **X. Adoption of the report (agenda item 9)**

88. In accordance with the established practice, the Sub-Committee adopted the report on its thirty-fifth session based on a draft prepared by the secretariat.

## Annex I

### **Draft amendments to the seventh revised edition of the Globally Harmonized System of Classification and Labelling of Chemicals (ST/SG/AC.10/30/Rev.7)**

#### **Chapter 1.2**

In the Note under Definition of “oxidizing gas”, Replace “ISO 10156:2010” by “ISO 10156:2017”.

*(Reference document: ST/SG/AC.10/C.4/2018/2, consequential amendment)*

#### **Chapter 2.2**

2.2.4.2.1 Replace “ISO 10156:2010” by “ISO 10156:2017”.

*(Reference document: ST/SG/AC.10/C.4/2018/2)*

2.2.4.2.4 Replace “ISO 10156:2010” by “ISO 10156:2017”.

*(Reference document: ST/SG/AC.10/C.4/2018/2)*

2.2.5 Replace “ISO 10156:2010” by “ISO 10156:2017”.

*(Reference document: ST/SG/AC.10/C.4/2018/2)*

#### **Chapter 2.3**

2.3.2.1 Amend the first sentence to read:

“Aerosols are classified in one of the three categories of this hazard class, according to Table 2.3.1, depending on:

- their flammable properties;
- their heat of combustion; and
- if applicable, test results from the ignition distance test, the enclosed space ignition test and the aerosol foam flammability test, performed in accordance with sub-sections 31.4, 31.5 and 31.6 of the *United Nations Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria*.”.

*(Reference document: ST/SG/AC.10/C.4/2018/9)*

2.3.2.1 Insert the following table before Note 1:

“Table 2.3.1: Criteria for aerosols

Category	Criteria
<b>1</b>	<p>(1) Any aerosol that contains <math>\geq 85\%</math> flammable components (by mass) and has a heat of combustion of <math>\geq 30</math> kJ/g;</p> <p>(2) Any aerosol that dispenses a spray that, in the ignition distance test, has an ignition distance of <math>\geq 75</math> cm; or</p> <p>(3) Any aerosol that dispenses a foam that, in the foam flammability test, has:</p> <p>(a) a flame height of <math>\geq 20</math> cm and a flame duration of <math>\geq 2</math> s; or</p> <p>(b) a flame height of <math>\geq 4</math> cm and a flame duration of <math>\geq 7</math> s.</p>
<b>2</b>	<p>(1) Any aerosol that dispenses a spray that, based on the results of the ignition distance test, does not meet the criteria for Category 1, and which has:</p> <p>(a) a heat of combustion of <math>\geq 20</math> kJ/g;</p> <p>(b) a heat of combustion of <math>&lt; 20</math> kJ/g along with an ignition distance of <math>\geq 15</math> cm; or</p> <p>(c) a heat of combustion of <math>&lt; 20</math> kJ/g and an ignition distance of <math>&lt; 15</math> cm along with either, in the enclosed space ignition test:</p> <ul style="list-style-type: none"> <li>- a time equivalent of <math>\leq 300</math> s/m<sup>3</sup>; or</li> <li>- a deflagration density of <math>\leq 300</math> g/m<sup>3</sup>; or</li> </ul> <p>(2) Any aerosol that dispenses a foam that, based on the results of the aerosol foam flammability test, does not meet the criteria for Category 1, and which has a flame height of <math>\geq 4</math> cm and a flame duration of <math>\geq 2</math> s.</p>
<b>3</b>	<p>(1) Any aerosol that contains <math>\leq 1\%</math> flammable components (by mass) and that has a heat of combustion <math>&lt; 20</math> kJ/g; or</p> <p>(2) Any aerosol that contains <math>&gt; 1\%</math> (by mass) flammable components or which has a heat of combustion of <math>\geq 20</math> kJ/g but which, based on the results of the ignition distance test, the enclosed space ignition test or the aerosol foam flammability test, does not meet the criteria for Category 1 or Category 2.</p>

”.

(Reference document: ST/SG/AC.10/C.4/2018/9 as amended in informal document INF.26)

2.3.2.1 Transfer existing Note under 2.3.2.2 as Note 2 under 2.3.2.1 and renumber existing Note 2 as Note 3.

(Reference document: ST/SG/AC.10/C.4/2018/9 as amended in informal documents INF.17 and INF.51) (Reference: Existing Note under 2.3.2.2)

2.3.2.2 Delete.

(Reference document: ST/SG/AC.10/C.4/2018/9 as amended in informal documents INF.17 and INF.51)

2.3.3 Renumber current Table 2.3.1 as Table 2.3.2.

(Reference document: ST/SG/AC.10/C.4/2018/9)

2.3.4 In the first sentence, delete “are not part of the harmonized classification system, but”.

(Reference document: ST/SG/AC.10/C.4/2018/11)

2.3.4.1 In the first sentence, delete “of the foam test (for foam aerosols) and” after “the results” and insert “and of the foam test (for foam aerosols)” at the end before “are required”.

(Reference document: ST/SG/AC.10/C.4/2018/11)

2.3.4.2 Amend the heading to read “Guidance on specific heat of combustion”.

(Reference document: ST/SG/AC.10/C.4/2018/12)

2.3.4.2.1 Amend to read as follows:

“2.3.4.2.1 For a composite formulation, the specific heat of combustion of the product is the summation of the weighted specific heats of combustion for the individual components, as follows:

$$\Delta H_c(\text{product}) = \sum_i^n [w(i) \times \Delta H_c(i)]$$

where:

$\Delta H_c(\text{product})$  = specific heat of combustion (kJ/g) of the product;

$\Delta H_c(i)$  = specific heat of combustion (kJ/g) of component i in the product;

$w(i)$  = mass fraction of component i in the product;

$n$  = total number of components in the product.

The specific heats of combustion, which are given in kilojoules per gram (kJ/g), can be found in the scientific literature, calculated or determined by tests (see ASTM D 240 and NFPA 30B). Note that experimentally measured heats of combustion usually differ from the corresponding theoretical heats of combustion, since the combustion efficiency normally is less than 100% (a typical combustion efficiency is 95%).”.

(Reference document: ST/SG/AC.10/C.4/2018/12)

2.3.4.2.2 Delete.

(Reference document: ST/SG/AC.10/C.4/2018/12)

## Chapter 2.4

2.4.1, Note Replace “ISO 10156:2010” by “ISO 10156:2017”.

(Reference document: ST/SG/AC.10/C.4/2018/2)

2.4.4.1 Replace “ISO 10156:2010” by “ISO 10156:2017”.

(Reference document: ST/SG/AC.10/C.4/2018/2)

2.4.4.2 Replace “ISO 10156:2010” by “ISO 10156:2017”.

(Reference document: ST/SG/AC.10/C.4/2018/2)

## Annexes 1 and 3

Document ST/SG/AC.10/C.4/2018/6, as amended in informal document INF.31 and with the consequential changes in informal document INF.31, adopted.

### **Annex 3, section 5**

Document **ST/SG/AC.10/C.4/2018/5** adopted.

### **Annex 7**

Document **ST/SG/AC.10/C.4/2018/10** adopted, with the following changes:

In first footnote 1, insert “to be identified” before “on the label”.

Re-number second footnote 1 as footnote 2.

## **Annex II**

### **Correction to the seventh revised edition of the Globally Harmonized System of Classification and Labelling of Chemicals (ST/SG/AC.10/30/Rev.7)**

**Chapter 3.3, 3.3.5, table, in the title of column (3)**

*For Category 2A read Category 2/2A*

*(Reference document: ST/SG/AC.10/C.4/2018/4)*

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