

## 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

26 June 2015

### Twenty-ninth session

Geneva, 29 June – 1 July 2015

Items 2 (a), (b), (c), (d), (i) and 3 (c) of the provisional agenda

## Work of the Sub-Committee of Experts on the Transport of Dangerous Goods on its 47th session on matters of interest to the GHS Sub-Committee

### Note by the secretariat

### Introduction

1. The Sub-Committee of Experts on the Transport of Dangerous Goods (TDG Sub-Committee) held its forty-seventh session from 22 to 25 June 2015. It considered issues of interest to the GHS Sub-Committee under items 2 (explosives and related matters) and 10 (issues relating to the GHS) of its agenda.
2. Following preliminary consideration in the plenary, most of the questions under agenda item 2, as well as the documents under agenda item 10 (g) relating to the use of the Manual of Tests and Criteria in the context of the GHS were referred to the Working Group on Explosives which met from 22 to 26 June 2015 under the chairmanship of Mr. Ed de Jong (Netherlands).
3. The report of the Working Group on Explosives containing the list of documents considered by the Working Group as well as the outcome of the discussions has been circulated as INF.53 at the 47<sup>th</sup> session of the TDG Sub-Committee<sup>1</sup>.
4. The conclusions of the Working Group were endorsed by the Sub-Committee with some exceptions and additional comments<sup>2</sup> (to be included in the final report of the Sub-Committee).
5. The excerpts from the report of the Explosives Working Group and of the draft report<sup>3</sup> of the TDG Sub-Committee on its 47<sup>th</sup> session on matters of interest to the GHS Sub-Committee are reproduced below for information of the GHS Sub-Committee and ease of reference. The items are listed hereafter in the order in which they appear in the agenda for the 29<sup>th</sup> session of the GHS Sub-Committee.
6. Proposed amendments to the GHS are reproduced in the Annex to this document.

<sup>1</sup> Available at: <http://www.unece.org/transport/areas-of-work/dangerous-goods/meetings-and-events/ecosoc-bodies/tdg-sub-committee/informal-documents/47th-session.html>

<sup>2</sup> Refer to *ST/SG/AC.10/C.3/2015/CRP.1/Add.8*, paragraphs 84–87)

<sup>3</sup> The excerpts from the report of the TDG Sub-Committee on its 47<sup>th</sup> session are reproduced as adopted during the report reading on 26 June 2015. The final version of the report will be circulated as document *ST/SG/AC.10/C.3/94* at: <http://www.unece.org/trans/main/dgdb/dgsubc3/c3rep.html>

## Work of the Sub-Committee of Experts on the Transport of Dangerous Goods on matters of interest to the GHS Sub-Committee (GHS agenda item 2 (a))

### A. Review of Chapter 2.1 of the GHS

*Documents:* ST/SG/AC.10/C.3/2015/27 - ST/SG/AC.10/C.4/2015/6 (SAAMI)

*Informal document:* INF.23 (TDG, 47<sup>th</sup>) – INF.8 (GHS, 29<sup>th</sup>) (Australia)

#### Excerpts from the report of the Working Group on Explosives

- **Document:** -/C.3/2015/27 - /C.4/2015/6 (SAAMI)

**Discussion:** As part of the review of Chapter 2.1 of the GHS, in 2015/27, SAAMI seeks to provide some clarification of the GHS approach to explosives classification by noting that, unlike other chemicals that are classified by their intrinsic properties, other factors such as inclusion within an article and packaging may affect the classification of explosives. Further, SAAMI proposes that the decision logic of the MTC be referred to and that duplicative logic be removed from the GHS.

**2015/27, para. 9:** In general, the working group supported the principle in this proposed amendment. The intent is to reinforce the concept that classification of explosives is based not only on intrinsic properties but also upon things such as packaging, amount of explosive, and inclusion of explosives within articles. There was some concern about the use of the phrase “alternative classification principles” as both regimes classify based upon hazard. Some of the working group preferred a reference to “additional classification principles”; however, the working group decided that the wording proposed in para. 9 is acceptable for now, as it will likely be further reviewed and possibly improved by the GHS during its 27<sup>th</sup> session.

**2015/27, para. 10:** The working group agreed that this proposed amendment is merely a consequential change in anticipation of changes to be made in accommodating the GHS within the MTC.

**2015/27, para. 11:** The working group agreed with SAAMI that duplication of the flowcharts in section 2.1.4.1 complicates amendments to the MTC because of the need to repeat those references duplicated in the GHS. The majority of the working group instead preferred a single source for those references within the MTC and a statement to direct the reader to the appropriate reference in the MTC. AEISG suggested that a new paragraph be added to the end of section 2.1.4.1 of the GHS to direct the reader to the appropriate section of the MTC for the flowcharts and then to remove the flowcharts from section 2.1.4.1 as proposed by SAAMI in para. 11. The new paragraph would read, “The current decision logic for the classification of explosive substances, mixtures and articles as prescribed above are located in Sections 10.3 and 10.4 of the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria. They are not provided in this document to ensure the most current decision logic is applied.”

2015/27, paras. 12 – 14: In general, the working group found the wording in Section 2.1.2.2 of the GHS to be confusing and could possibly lead the reader to conclude that assignment of explosives into divisions was based solely on Test Series 2 and 3. This is not the case, as division assignment is made based upon the whole of the class 1 Test Series and most specifically upon Test Series 6. The working group agreed that the proposals in paras. 12 – 14 of 2015/27 needed further development and that section 2.1.2 should be further reviewed for improvement as part of the overall review of Chapter 2.1 of the GHS. This will include consideration of approaches for explosives when they are not in their packaging or are being disassembled as most of the working group believe that manufacture is outside the scope of the GHS. Members of the working group will work intersessionally to get this review done. The work will be coordinated by the working group chair and members of the GHS will be invited to contribute to this review.

- **Informal document** : -TDG/47/INF.23 – GHS/29/INF.8 (Australia)

**Discussion**: Australia had previously volunteered to lead the work relating to review of Chapter 2.1 of the GHS; however, in INF.23, advises that it is no longer in a position to lead this work. This was noted, and no further discussion was undertaken by the working group.

### **Conclusion**

The working group endorsed the amendments in paragraphs 9 and 10 of 2015/27. The working group endorsed the amendment proposed in paragraph 11 of 2015/27 as amended by the working group and described above. See Amendments 1 – 3 in Annex 2.

The working group did not endorse the amendments proposed in paragraphs 12 – 14 of 2015/27 as more work needs to be done. Members of the working group, under the guidance of the working group chairman, will work intersessionally to develop suggested revisions to further improve chapter 2.1 of the GHS. Members of the GHS will be invited to participate in this intersessional work.

(Ref. doc.: TDG/47/INF.53, paragraph 13)

### ***Draft report of the TDG Sub-Committee on its 47<sup>th</sup> session***

86. For the review of Chapter 2.1 of the GHS (para. 13), it was agreed to place Amendment 1 of Annex 2 between square brackets for confirmation at a later stage. It was underlined that in any case, these proposed amendments of Annex 2 had to be submitted to the GHS Sub-Committee for consideration.

(Reference doc: ST/SG/AC.10/C.3/2015/CRP.1/Add.8, paragraph 86)

## **B. Test and criteria for oxidizing liquids and solids**

*Document*: ST/SG/AC.10/C.3/2015/6 (France)

*Informal document*: INF.39 (TDG, 47th session) (France)

72. The Sub-Committee took note of the progress report on the Round Robin testing programme for Tests O.2 and Tests O.3.

(Reference doc: ST/SG/AC.10/C.3/2015/CRP.1/Add.7, paragraph 72)

**C. Classification of flammable gases (GHS Sub-Committee agenda item 2 (b))**

*Information documents: INF.5 (TDG) - INF.3 (GHS) (Belgium and Japan)  
INF.58 (TDG) - INF.16 (GHS) (United States of America)*

73. The Sub-Committee took note of the progress made by the Joint TDG/GHS informal working group dealing with categorization for flammable gases, and noted that a new session of the informal working group was scheduled for 8-10 September in Brussels.

82. The Sub-Committee agreed that the issues mentioned could be addressed by the informal working group, subject to concurrence by the GHS Sub-Committee.

*(Reference docs: ST/SG/AC.10/C.3/2015/CRP.1/Add.7, paragraph 73 and ST/SG/AC.10/C.3/2015/CRP.1/Add.8, paragraph 82)*

**D. Corrosivity criteria (GHS Sub-Committee agenda item 2 (c))**

*Document: ST/SG/AC.10/C.3/2015/21– ST/SG/AC.10/C.4/2015/2 (Canada)*

*Informal documents: INF.24 (TDG) (Spain)  
INF.25 (TDG) (CEFIC, AISE)*

75. The proposal by Canada to revise Chapter 2.8 of the Model Regulations and the related proposals by Spain, CEFIC and AISE led to long discussions which led the Sub-Committee to convene a lunchtime working group to discuss and decide on the way forward.

76. The conclusions of the Sub-Committee following discussions in the working group were that:

- (a) The GHS corrosivity criteria as written in table 3.2.1 have been adequately transposed into the Model Regulations;
- (b) The Sub-Committee is in favour of the use of alternative methods to avoid testing but the current methods in the GHS are not sufficiently precise to adequately assign substances and mixtures to the existing GHS sub-categories 1A, 1B or 1C or to appropriate transport packing groups;
- (c) As assignment to packing groups has considerable economic and safety impact on transport of dangerous goods, it is essential to find a solution that would guarantee the current level of safety without too restrictive conservative classification;
- (d) The pH approach is deemed inadequate for assignment of packing groups; there is general support for the bridging principles approach; there is also support for the additivity method but the current parameters lead to a too stringent assignment to packing groups;
- (e) Since the packing groups are transport specific, it was suggested that the work should be performed by the TDG Sub-Committee. However it was recalled that:
  - (i) The sub-categories 1A, 1B and 1C had been developed for the needs of the transport sector (Packing group I, II and III);
  - (ii) In accordance with the building block approach, sectors were free to select the hazard categories to be regulated, but not to alter the cut-off values, concentration limits or the decision making schemes;

- (iii) Now that these sub-categories 1A, 1B and 1C exist, other sectors might be interested in using them as well, and therefore it would be preferable that the cut-off limits for packing groups correspond to those of sub-categories 1A, 1B and 1C.
- (f) In order to determine a reliable method that would lead to classification as close as possible to the current transport packing group classification, the GHS Sub-Committee should be asked:
  - (i) Whether it is possible to modify the current parameters of the additivity method;
  - (ii) If not, whether it could provide advice on the possibility to include additional parameters that could be used only in the context of transport, and it could provide assistance to the TDG Sub-Committee for a closer match between sub-categories 1A, 1B and 1C and transport packing groups.

77. Following these conclusions, the expert from Canada who had considered to withdraw his proposal said that he would maintain it on the agenda of the GHS Sub-Committee as he would like to obtain answers to the questions asked therein.

The experts from Canada, Spain and CEFIC were encouraged to keep working on their proposals.

*(Reference doc: ST/SG/AC.10/C.3/2015/CRP.1/Add.7, paragraphs 75-77, as amended)*

## **E. Use of the Manual of Tests and Criteria in the context of the GHS (GHS Sub-Committee agenda item 2 (d))**

*Documents: ST/SG/AC.10/C.3/2014/61 - ST/SG/AC.10/C.4/2014/8 (Secretariat)*

*Informal documents: INF.6 (TDG, 47th) – INF.4 (GHS, 29th) (Netherlands)  
 INF.21(TDG, 47th) – INF.4 (GHS, 29th) (Working Group Chair)  
 INF.31(TDG, 47th) – INF.9 (GHS, 29th) (Canada)  
 INF.44 (TDG, 46th) – INF.21 (GHS, 28th) (Secretariat)  
 INF.8 and Add.1 to 5 (TDG, 45th) – INF.5 and Add.1 to 5(GHS, 27th)  
 (Secretariat)*

### **Report of the Working Group on Explosives**

#### **Discussion:**

At the 46<sup>th</sup> session the Sub-committee agreed to review the Manual of Tests and Criteria in the context of GHS. INF.6 and INF.31 share extensive comments and suggestions from the Netherlands and Canada. Those comments will be considered by the working group and may serve as the basis for future proposals regarding the use of the MTC in the context of the GHS.

In INF.21, the working group chair advises that this topic will be discussed on 24 June and invites experts regularly attending GHS meetings and wanting to contribute to the discussions in the working group to be present on 24 June for the discussion.

2014/61, INF.44, and INF.8 + Add. 1 – 5 provide the background information and specific amendments to the MTC to introduce the GHS context.

The working group discussed INF.6 and INF. 31 and provided some comments to the GHS Secretariat in regards to INF.8 of the 45<sup>th</sup> session.

- ***Informal document: INF.6 (TDG, 47th) – INF.4 (GHS, 29th) (Netherlands)***

*Para 3 – The working group agreed that the comparison table was the best method for showing the relationship between the transport classification of the Model Regulations and the GHS classifications.*

Para. 4 – The working group agreed with this proposal.

Para. 5 – The working group was asked to look at INF.8 (+Adds) to review the issue of substance/mixture and to return with suggestions for simplification and to identify when it would be necessary to use both terms. The working group chairman and SAAMI will do the review for Part I and the introduction and Germany and CEFIC will review Part II. This review should be completed within two months. After this review is completed, France will look at the French version.

Para. 6 – A detailed review will be undertaken in conjunction with the review described above to determine when reference to sectors is appropriate and when such reference is inappropriate.

Para. 7 – To avoid unnecessary duplication and the need to make updates in multiple documents, the majority of the working group concluded that the flowcharts should be removed from the GHS and published only in the MTC. The flowcharts would be replaced with references to the appropriate sections in the MTC.

Para. 8 – The Netherlands will keep these points in mind as the review of the GHS context issue continues.

- ***Informal document: INF.31(TDG, 47th) – INF.9 (GHS, 29th) (Canada)***

Para 4 – the Secretariat advised that the MTC was originally developed with only transport in mind. However, the effort now is to determine how to make the manual also apply to the GHS. The working group understands the concern expressed, but they did not support this statement.

Para. 5 – The working group agreed that, if needed in the manual, "supply and use" is the preferred terminology over "consumer".

Para. 6 – The working group supported the proposal in this paragraph.

Para. 7 – This issue was dealt with in INF.6. However, SAAMI pointed out that the use of the term article is inconsistent with their understanding of the term. This should be clarified in the future. The UK requested that an explanation be provided as to why articles are excluded from GHS but explosives articles are not. The Secretariat explained that explosives articles are covered by GHS to maintain consistency with the TDG. After the explanation, UK still preferred that guidance be added in the future. This should be a matter for a separate proposal.

Paras. 8 - 9 – These issues were dealt with in INF.6. Regarding the proposal about section 1.2.1, IME observed that what was proposed by Canada duplicated too much of the detail. It was suggested that a simple statement and a reference to the appropriate section in the Model Regulations would be sufficient. The working group agreed that this was a good solution. The working group also agreed that the revisions suggested by the Secretariat in INF.8 of the 45<sup>th</sup> session, and its addenda, were preferable in this case over the proposals by Canada.

Para. 10 – The working group preferred the original text from the Secretariat that is contained in INF.8 of the 45<sup>th</sup> session and its addenda rather than the proposal in para.10.

Para. 11 – The working group preferred not to duplicate text from the Model Regulations into the MTC.

Para. 12 – The working group did not support this proposal.

Paras. 14 and 15 – These issues were dealt with in INF.6

Para. 16 – The WG agreed that this issue needs to be resolved.

Para. 17 – The WG agreed with this recommendation. Some additional explanation of the figure number protocol was also recommended.

Para. 18 – dealt with in para. 5

**Conclusion:** The comments discussed above were received by the GHS Secretariat who will take them into account as a new version of the proposals originally published in INF.8 of the 45<sup>th</sup> session and its addenda is prepared using the 6<sup>th</sup> revision of the MTC as its base document.

***Draft report of the TDG Sub-Committee on its 47<sup>th</sup> session***

The Sub-Committee endorsed the conclusions of the Working Group.

*(Reference doc: ST/SG/AC.10/C.3/2015/CRP.1/Add.8, paragraph 84)*

**F. Joint work with the TDG Sub-Committee (GHS Sub-Committee agenda item 2 (i))**

*Informal document:* INF.56 – INF.15 (Secretariat)

80. The Sub-Committee noted that the experts from Belgium, France and United Kingdom had submitted a proposal for joint work at the last session of the Committee (Committee's informal document INF.3) which had been agreed subject to concurrence by both sub-committees (ST/SG/AC.10/42, para .16). The proposed possible arrangements for scheduling meetings for such joint work (ST/SG/AC.10/42, para.17) had also been endorsed by the Council.

81. The Sub-Committee agreed that such joint work would enhance cooperation and, subject to agreement by the GHS Sub-Committee, such joint work could start at the next session on a trial basis. Possible areas of joint interest were corrosivity criteria, criteria for flammable gases, explosives, the Manual of Tests and Criteria, labelling/placarding issues, and in fact all documents bearing a double symbol. The Sub-Committee felt that the topics could be selected by the Bureau of both sub-committees just after the deadline for submission of documents. The bureaux could also evaluate the time needed for joint work (which would, in any case, be not more than a full day). The methods of work could also be discussed at the first session and adapted as necessary after experience has been gained.

*(Reference doc: ST/SG/AC.10/C.3/2015/CRP.1/Add.8, paragraphs 80-81)*

**G. Prohibition in transport of non-transport GHS pictograms when not in a complete GHS label (GHS Sub-Committee agenda item 3 (c))**

*Document:* ST/SG/AC.10/C.3/2015/23 – ST/SG/AC.10/C.4/2015/3 (DGAC)

78. Several experts expressed support for the DGAC proposal, or at least its principle as it would be highly desirable to avoid unnecessary over placarding of cargo transport units that can mislead emergency responders. However several experts felt that it would not be appropriate to include provisions in the Model Regulations that would be in conflict with the legal requirements of other sectors. This might be solved by introducing the GHS text as a note. It was also suggested that the problem raised could be linked to improper enforcement practices and that guidance for cargo transport units in the GHS, similar to guidance that is available in annex 7 for labelling of packagings could be useful.

*(Reference doc: ST/SG/AC.10/C.3/2015/CRP.1/Add.7, paragraph 78 as amended)*

**H. GHS labels in transport on combination packagings containing multiple goods not subject to transport of dangerous goods regulations (GHS Sub-Committee agenda item 3 (c))**

*Informal document:* INF.17 – (DGAC)

79. The Sub-Committee noted that DGAC had submitted a proposal to the GHS Sub-Committee in this respect (ST/SG/AC.10/C.4/2015/4).

*(Reference doc: ST/SG/AC.10/C.3/2015/CRP.1/Add.7, paragraph 79)*



## Annex

### Working Group on Explosives (22 – 25 June 2015) Proposed amendments to the GHS

Note: Source of proposed change is indicated by *italicized text (Source: XXX)*

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#### Amendment 1.

**[Section 1.3.2.2.1]** – add a new sentence as indicated below:

1.3.2.2.1 The GHS uses the term “hazard classification” to indicate that only the intrinsic hazardous properties of substances or mixtures are considered. In special cases, such as for explosives, alternative classification principles may apply.

Source: *ST/SG/AC.10/C.4/2015/6, para. 9 and UN/SCETDG/47/INF.53, para. 13*

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#### Amendment 2.

**Section 2.1.4** – amend as indicated below:

The decision logic and guidance, ~~which follow, are not part of the harmonized classification system, but have been provided here as additional guidance~~ in the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria apply. It is strongly recommended that the person responsible for classification studies the criteria before and during use of the decision logic.

Source: *ST/SG/AC.10/C.4/2015/6, para. 10 and UN/SCETDG/47/INF.53, para. 13*

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#### Amendment 3.

**Section 2.1.4.1** – insert a new paragraph as indicated below and delete figures 2.1.1, 2.1.2 and 2.1.3.

The classification of substances, mixtures and articles in the class of explosives and further allocation to a division is a very complex, three step procedure. Reference to Part I of the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria*, is necessary. The first step is to ascertain whether the substance or mixture has explosive effects (Test Series 1). The second step is the acceptance procedure (Test Series 2 to 4) and the third step is the assignment to a hazard division (Test Series 5 to 7). The assessment whether a candidate for “ammonium nitrate emulsion or suspension or gel, intermediate for blasting explosives (ANE)” is insensitive enough for inclusion as an oxidizing liquid (Chapter 2.13) or an oxidizing solid (Chapter 2.14) is answered by Test Series 8 tests. ~~The classification procedure is according to the following decision logics (see Figures 2.1.1 to 2.1.4).~~

The current decision logic for the classification of explosive substances, mixtures and articles as prescribed above are located in Sections 10.3 and 10.4 of the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria. They are not provided in this document to ensure the most current decision logic is applied.

Source: *ST/SG/AC.10/C.4/2015/6, para. 11 and UN/SCETDG/47/INF.53, para. 13*