

## 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

9 December 2015

Thirtieth session

Geneva, 9– 11 December 2015

### Work of the Sub-Committee of Experts on the Transport of Dangerous Goods on its 48th session on matters of interest to the GHS Sub-Committee

Note by the secretariat

#### Introduction

1. The TDG and GHS sub-committees agreed at its last session to address issues of common concern during a joint session. The agenda for the joint session will cover part of the issues listed under agenda item 2 (explosives and related matters) and agenda item 10 (issues relating to the GHS) of the TDG Sub-Committee agenda.
2. Some of the issues on the agenda for the joint TDG-GHS meeting were preliminary considered by the TDG Sub-Committee.
3. Most of the questions on explosives and related matters 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 30 November to 4 December 2015 under the chairmanship of Mr. Ed de Jong (Netherlands). 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 48<sup>th</sup> session of the TDG Sub-Committee<sup>1</sup>.
4. The TDG Sub-Committee endorsed the conclusions of the Explosives Working Group with some exceptions and additional comments<sup>2</sup>. These conclusions will be included in the final report of the TDG Sub-Committee as appropriate.

#### Outcome of the discussions at the TDG 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 48th session on matters of interest to the GHS Sub-Committee are reproduced below for information of the GHS Sub-Committee and ease of reference.

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<sup>1</sup> Available at: <http://www.unece.org/trans/main/dgdb/dgsubc3/c3inf48.html>

<sup>2</sup> Refer to *ST/SG/AC.10/C.3/2015/CRP.3/Add.9*, paragraphs 97–99)

<sup>3</sup> Excerpts from the draft report of the TDG Sub-Committee on its 47<sup>th</sup> session are reproduced as adopted during the report reading on 9 December 2015 (a.m.). The final version of the report will be circulated as document *ST/SG/AC.10/C.3/96* at:

<http://www.unece.org/trans/main/dgdb/dgsubc3/c3rep.html>

6. The items are listed hereafter in the order in which they appear in the agenda for the 30<sup>th</sup> session of the GHS Sub-Committee.

### **Issues submitted for consideration by both sub-committees**

#### **7. Use of the Manual of Tests and Criteria in the context of the GHS (GHS agenda item 2)**

“The Explosives Working Group (EWG) reviewed these proposals as follows:

- References to substances and mixtures: Rather than adjusting all references in the Manual of Tests and Criteria (MTC), the working group accepted the recommendation to add a note to para. 1.1.1 of the MTC explaining that, where the term “substance” appears, it includes substances and mixtures, unless specified otherwise.
- Expansion of references to transport to include other sectors: after considerable debate, the EWG decided that the EWG chair should distribute a marked up draft so that it can determine whether each reference to transport is necessary or if no sector mention would be appropriate.
- Regarding replacement of transport specific classification flowcharts in the MTC with the more generic ones that appear in the GHS: No consensus could be reached. This will be considered further during the review mentioned above to try to determine an acceptable solution.
- Regarding the proposal to add guidance about how to address changes in physical state: In general, the EWG agreed with the text previously suggested by the Secretariat; however, some clarification is needed and will be addressed by the working group.
- Removal of class references when describing dangerous goods (for example Explosives of Class 1): The EWG agreed that references to the class (i.e., “of Class 1) were unnecessary (i.e., “Explosives” is descriptive enough).
- References to packing group and/or category in Part III of the MTC: The EWG concurred with the recommendation.

In 48/INF.46, Canada makes proposals related to the introduction of GHS context into Section 31 of Part III of the MTC. During the discussion at the EWG, Canada acknowledged the previous determination by the EWG related to references to “mixtures” in association to references to “substances” and agreed to that solution being applied to Chapter 31 as well. The mention of pyrophoric substances was considered and the EWG recommended leaving that reference out for the time being. Other than as noted, in general, the EWG accepted the recommendations in 48/INF.46 and the review will continue.

In 48/INF.47, Canada makes proposals related to the introduction of GHS context into Section 32 of Part III of the MTC. During the discussion at the EWG, Canada acknowledged the previous determination by the EWG related to references to “mixtures” in association to references to “substances” and agreed to that solution being applied to Chapter 32 as well. The working group noted that references in Table 32.1 were inconsistent with the comparable tables in the Model Regulations and the GHS and that review should be undertaken to ensure that all the tables are consistent. Other than as noted, in general, the EWG accepted the recommendations in 48/INF.46 and the review will continue.

Conclusion: The EWG appreciated the work done thus far by those reviewing the MTC to determine appropriate introduction of GHS context and, with some adjustments, endorsed

the recommendations made. Given acceptance of those recommendations, the review will continue with a goal to complete the work during the current biennium.”

*(Ref.Doc: Report of the Explosives Working Group to the TDG Sub-Committee, INF.53 (48<sup>th</sup> session), para.14)*

## **8. Revision of Chapter 2.1 of the GHS (GHS agenda item 2)**

“The leader of the informal correspondence group (ICG) reports his hope that the work can be completed during the current biennium and list the following fundamentals within which the ICG hope to complete this work:

- No classification of new substances, mixtures or articles as explosives
- No new classification procedures or new mandatory tests
- Assigned GHS-labelling elements for all explosives
- Keep it as simple as possible

Comments have been received and reviewed by the ICG leader, an updated proposal has been circulated to ICG members and comments are pending.

**Conclusion:** There was wide support within the Explosives Working Group (EWG) for the four basic principles identified in this report (and listed above). In regards the three work streams identified by the leader of the ICG, feedback by the ICG is still pending (due 10 January 2016). Once collected and reviewed, the goal is to complete the work in this biennium. The EWG identified some work complementary to the three work streams that should also be addressed, recognizing that the priority is to resolve the work streams. Intersessionally, the EWG chairman will better define this additional work and the review will progress during the current, and possibly the next, biennium.”

*(Ref.Doc: Report of the Explosives Working Group to the TDG Sub-Committee, INF.53 (48<sup>th</sup> session), para.10)*

## **9. Tests and criteria for oxidizing liquids and solids (GHS agenda item 2)**

*“Document: ST/SG/AC.10/C.3/2015/49 - ST/SG/AC.10/C.4/2015/12 (France)*

95. The Sub-Committee took note of the progress report and thanked the expert from France for leading this work on determining new grades of cellulose suitable for use in tests on oxidizing liquids and solids.”

*(Ref.Doc: Draft report of the TDG Sub-Committee on its 48th session, ST/SG/AC.10/C.3/2015/CRP.3/Add.9, para. 95)*

## **10. Classification of flammable gases (GHS agenda item 2)**

### **(a) Work of the informal working group on classification criteria for flammable gases**

*“Informal documents: TDG/INF.15 – GHS/INF.4 (Belgium, Japan)  
TDG/INF.24– GHS/INF.7 (Japan, Belgium)  
TDG/INF.43 – GHS/INF.12 (CEFIC)*

111. The Sub-Committee agreed to recommend to the GHS Sub-Committee the adoption of option 3 described in the report INF.15 consisting in dividing current category 1 in sub-categories 1A and 1B.

**(b) Other proposals for classification of flammable gases**

*Informal document:* TDG/INF.26-GHS/INF.8 (Germany, EIGA, CEFIC)

112. The expert from Germany proposed to use the cut-off limit as proposed by the informal working group between category 1 and category 2 by restricting category 1 to sub-category 1A proposed by the working group, and including in category 2 the proposed sub-category 1B. She also proposed to include in division 2.1 of the Model Regulations on the Transport of Dangerous Goods both categories 1 and 2, which would imply amending the criteria for Division 2.1. This led to long discussions since several delegations were opposed to changes that would affect current transport classification. This was further discussed by a coffee-break working group where it was agreed that this could be further debated but that it should not lead to changes to the current transport classification of gases and gas mixtures in division 2.1.”

*(Ref.Doc: Draft report of the TDG Sub-Committee on its 48th session, ST/SG/AC.10/C.3/2015/CRP.3/Add.11, paras. 111 and 112 as amended)*

**11. Prohibition in transport of non-transport GHS pictograms when not in a complete GHS label (GHS agenda item 2)**

*“Document:* ST/SG/AC.10/C.3/2015/54 - ST/SG/AC.10/C.4/2015/11 (DGAC)

107. The Sub-Committee agreed to introduce a new NOTE at the end of 5.1.1.2 on the basis of the DGAC proposal which was slightly amended, consistently with paragraph 1.4.10.4.4 of the GHS (see annex ...).”

*(Ref.Doc: Draft report of the TDG Sub-Committee on its 48th session, ST/SG/AC.10/C.3/2015/CRP.3/Add.10, para. 107)*

**12. GHS labels in transport on outer packagings not subject to TDG regulations (GHS agenda item 2)**

*“Document:* ST/SG/AC.10/C.3/2015/57- ST/SG/AC.10/C.4/2015/16 (DGAC)

119. The Sub-Committee noted that DGAC had submitted this document to both sub-committees to draw attention to the practical problems caused during transport when authorities require the GHS labelling of transport packages (i.e. outer packagings of combination packagings) that contain chemicals which are not subject to transport of dangerous goods regulations.”

*(Ref.Doc: Draft report of the TDG Sub-Committee on its 48th session, ST/SG/AC.10/C.3/2015/CRP.3/Add.12, para. 119 as amended)*

**13. Classification of crude oil (GHS agenda item 2)**

*“Informal documents:* INF.38 (United States of America)  
TDG/INF.62 and –Add.1 – GHS/INF. 23 and –Add.1 (Canada)

101. The Sub-Committee noted that the experts from Canada and the United States of America were currently working on issues relating to the classification of crude oil, in the context of follow-up to the various accidents that happened in the recent years in North America during rail transport of crude oil (see ST/SG/AC.10/C.3/2014/49 and informal document INF.37 submitted at the 46<sup>th</sup> session). They were considering in particular the relevance of the current criteria for classes 2 and 3 when applied to complex mixtures of gases and liquids such as crude oil, and of the test methods.

102. Questioned by the expert from the United States about the current definition of gases, a member of the secretariat said that when the Committee discussed the definition of

class 2 in the 1950s, it could not find a solution to reconcile the system of regulations applicable in North America with those for rail transport in Europe (RID and SMGS). As a consequence, two methods of differentiation between a liquefied gas exerting a low pressure at a certain temperature and a flammable liquid were introduced as two diverging set of criteria for class 2:

- (a) The European criteria: substances with a critical temperature lower than 50 °C or which exerts, at 50 °C, a vapour pressure greater than 3kg/cm<sup>2</sup>;
- (b) The US criteria (two different criteria): (i) substance exerting an absolute pressure exceeding 2.8kg/cm<sup>2</sup> at 21.1 °C or 7.3 kg/cm<sup>2</sup> at 54.4 °C; or (ii) substance exerting a Reid vapour pressure exceeding 2.8 kg/cm<sup>2</sup> at 37.8 °C.

The second European criterion still remains in the current Model Regulations, but the US criteria were changed to a single one (entirely gaseous at 20 °C and a standard pressure of 101.3 kPa) in the 7th revised edition published in 1991.

103. Several delegations expressed interest for this work but felt that any proposal for change to the current definitions and criteria would have to be carefully considered, as it did not seem obvious to them that different classification criteria would have prevented the said accidents. They felt that it was also important to draw lessons from the accidents and to analyse the current tank-wagon construction requirements and operational requirements applicable to rail transport of crude oil.

104. Interested delegations were invited to liaise with the expert from Canada and to provide information as deemed appropriate. Depending on the outcome of this information sharing, it would be decided whether it is relevant to develop terms of reference for a possible informal working group.”

*(Ref.Doc: Draft report of the TDG Sub-Committee on its 48th session, ST/SG/AC.10/C.3/2015/CRP.3/Add.10, paras. 101-104)*

#### **14. Nanomaterials (GHS agenda item 3 (d))**

*“Informal document: TDG/INF.58 – GHS/INF.20 (France)*

110. The expert from France explained the problems encountered in trying to determine the physical hazards of nanomaterials when using the usual test methods of the Manual and explained that this issue would be submitted to the GHS Sub-Committee working group dealing with nanomaterials.”

*(Ref.Doc: Draft report of the TDG Sub-Committee on its 48th session, ST/SG/AC.10/C.3/2015/CRP.3/Add.10, para.110)*

#### **15. Use of precautionary statement P502 for explosives (GHS agenda item 4 (b))**

“The EWG found the options proposed in C.4/2015/9 to be very difficult to comprehend and it recommends that a separate precautionary statement for explosives be developed, as originally proposed by Sweden (UN/SCEGHS/25/INF.18).”

*(Ref.Doc: Report of the Explosives Working Group to the TDG Sub-Committee, INF.53 (48<sup>th</sup> session), para.15)*

#### **16. Information regarding on-going work on possible revision of the UN classification of ammonium nitrate based fertilizers (GHS agenda item 8)**

*“Informal document: TDG/INF.34 - GHS/INF.10 (Sweden)*

100. The chairman of the Working Group on Explosives reported orally on the outcome of the discussion of this document by the Working Group on Explosives. The Working

Group had expressed a lot of interest for the idea of a flowchart that would clarify the procedure for classification of ammonium nitrate based fertilizers and had provided several comments that the expert from Sweden might wish to take into consideration should an official proposal be prepared on this subject.”

*(Ref.Doc: Draft report of the TDG Sub-Committee on its 48th session, ST/SG/AC.10/C.3/2015/CRP.3/Add.10, para. 100)*

## **Other issues of interest to the GHS Sub-Committee considered by the TDG Sub-Committee**

### **17. Use of the terms “boiling point” and “initial boiling point”**

*“Informal document: INF.27 (TDG, 48<sup>th</sup>) (Germany)*

19. Several delegations pointed out that the term “boiling point” was used in the context of pure substances or azeotropic mixtures, and that the terms “initial boiling point” and “boiling range” pertained to zeotropic mixtures. They therefore did not consider it appropriate to systematically replace the term “boiling point” by “initial boiling point”.

20. The representative of Germany said that he would inform the group that had raised the issue of the discussion and might return to the matter if seemed necessary to make adaptations according to the context.”

*(Ref. doc: Draft report of the TDG Sub-Committee on its 48th session, ST/SG/AC.10/C.3/2015/CRP.3/Add.1, paras. 19 and 20)*

**Note:** *The GHS includes a definition of “initial boiling point” and uses the same terminology as the Model Regulations in the chapters addressing flammable liquids, self-reactive substances and mixtures and organic peroxides. In addition, references to “boiling point” appear also in Chapter 3.10 (aspiration hazards) while the revised section 9 of the safety data sheets (in chapters 1.5 and Annex 4 if the GHS) includes references to “boiling point”, “initial boiling point” and “boiling range”.*

*If the applicability of these terms for flammable liquids, self-reactive substances and mixtures and organic peroxides need to be revised in the Model Regulations, it should also be considered whether the equivalent GHS text needs to be amended accordingly.*

### **18. Clarification relating to the test method for readily combustible solids (Test N.1)**

*“Informal document: INF.42 (TDG, 48th) (Germany)*

23. Several delegations shared the view of the expert from Germany that it would be useful to clarify the points mentioned in her informal document. Additional points requiring clarification, such as the definition of friability and the type of wetting solution to be used, were raised. Interested delegations were invited to study the document and to transmit their comments to the expert from Germany, who would prepare a formal proposal for the next session.

24. It was also pointed out that the GHS Sub-Committee was currently working on nanomaterials. Although that work focused mainly on health hazards, it also appeared to indicate that the presence of nanomaterials had an impact on physical hazards, such as the flammability of solids. It was thus suggested that the issue should be addressed during the joint meeting of the two Sub-Committees.”

(Ref.Doc: Excerpts from the report of the TDG Sub-Committee on its 48th session, ST/SG/AC.10/C.3/2015/CRP.3/Add.2)

**Note:** Test N.1 is referred to in the GHS in Chapter 2.7 (flammable solids)

## 19. Additional criteria for polymerizing substances

“Document: ST/SG/AC.10/C.3/2015/36 (CEFIC)

Informal document: INF.55 (TDG, 48th) (CEFIC)

48. After an initial discussion in plenary meeting, the representative of CEFIC drafted a revised proposal for the insertion, in appendix 6 of the Manual of Tests and Criteria, of a new section 5.2 that would allow certain substances to be excluded, by means of screening procedures, from the procedure to be followed for polymerizing substances of Division 4.1. That proposal, contained in informal document INF.55, was adopted (see annex ...).”

(Ref.Doc: Draft report of the TDG Sub-Committee on its 48th session, ST/SG/AC.10/C.3/2015/CRP.3/Add.4)

## 20. Safety data sheets (SDS) and transport

“Informal document: INF.28 (COSTHA)

108. The Sub-Committee noted that, although the GHS was not supposed to apply to articles, the industry was often requested to supply SDS when offering certain articles containing dangerous substances for shipment, e.g. vehicles, safety devices, batteries, fire-extinguishers etc. In such cases it was not clear how to fill SDS, since section 14 of SDS had to apply to the article as offered for shipment while the rest of the SDS would have to apply to the substance contained in the article.

109. The Sub-Committee recognized that this was a problem and that it would be useful that both sub-committees develop joint guidance in this respect. A member of the secretariat suggested that the list of articles subject to the Model Regulations on the Transport of Dangerous Goods be submitted to the GHS Sub-Committee to seek their advice as to whether or not the GHS, including SDS, was deemed to apply.”

(Ref.Doc: Draft report of the TDG Sub-Committee on its 48th session, ST/SG/AC.10/C.3/2015/CRP.3/Add.10, paras. 108 and 109)

## 21. Corrosivity criteria (Revision of Chapter 2.8)

“Informal documents: INF.20 (CEFIC and AISE)  
INF.48 (Canada)

117. The Sub-Committee thanked the authors of these documents for their efforts to address the question of the revision of Chapter 2.8, but as the proposals had been submitted rather late and as informal documents, most delegations had not had time to study them in detail. It was recalled that the criteria of the Model Regulations for Class 8 were harmonized with those of the GHS for corrosivity, but the main problem was for the assignment of packing groups within Class 8 since this had to be done in accordance with the test methods specified in Chapter 2.8, which could be particularly difficult to the industry in the case of mixtures.

118. Nevertheless, these documents provided an opportunity for delegations to discuss how to further proceed, and it was agreed that CEFIC would prepare an official proposal for the next session taking into account bridging principles, additivity and extreme pH values as alternative methods for classification. CEFIC would also provide, in an informal document, relevant data relating to mixtures containing well-known corrosive substances

for which information is available in order to illustrate the adequacy of the packing group assignment methods proposed.”

*(Ref.Doc: Draft report of the TDG Sub-Committee on its 48th session, ST/SG/AC.10/C.3/2015/CRP.3/Add.12, paras. 117 and 118 as amended)*

## **22. Dates of the next session**

“120. The Sub-Committee noted that 6 July 2016 (Eid Al-Fitr) would be an official holiday in the United Nations, which meant that no secretariat services would be available on that day which was the one which had been scheduled for a joint session for both sub-committees. Rooms could be made available for informal meetings but no interpretation would be provided. As a consequence the arrangements for the next session will have to be discussed with the GHS Sub-Committee.”

*(Ref.Doc: Draft report of the TDG Sub-Committee on its 48th session, ST/SG/AC.10/C.3/2015/CRP.3/Add.12, para. 120)*

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