

## 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

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### Nineteenth session

Geneva, 30 June-2 July 2010

Items 2 (a), 3 and 4 (a) and 4 (c) of the provisional agenda

## Work of the Sub-Committee of experts on the Transport of Dangerous Goods on its thirty-seventh session

### Note by the secretariat

#### I. Introduction

1. At its thirty-seventh session, the Sub-Committee of Experts on the Transport of Dangerous Goods (TDG Sub-Committee) considered the following issues which may be of interest to the GHS Sub-Committee:

- (a) Explosives and related matters;
- (b) Miscellaneous classification issues;
- (c) Further alignment of corrosivity criteria in Class 8 of the UN Model Regulations with GHS criteria;
- (d) Hazard communication for supply and use of aerosols
- (e) Comparison between classification of dangerous goods in the Model Regulations and the European CLP regulations

2. The following documents in the agenda for the nineteenth session of the GHS Sub-Committee were also considered by the TDG Sub-Committee:

- INF.23 (TDG/INF.54): refer to Part II, section 2;
- INF.12 (TDG/INF.31): refer to Part III, section 2;
- INF.14 (TDG/INF.39): refer to Part IV;
- ST/SG/AC.10/C.4/2010/3 - ST/SG/AC.10/C.3/2010/17: refer to part V;

3. This document contains excerpts from the report of the working group on explosives (TDG/INF.73) and from the draft report of the TDG Sub-Committee on matters of concern to the GHS Sub-Committee.

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\* Note by the secretariat: This document has been revised to take account of the corrections made by the TDG Sub-Committee on Wednesday 30 June 2010, during the reading of the draft report on its 37th session. The corrections apply to Section II (items 2, 3 and 6), Section III (item 2) and Section IV of this document.

## II. Explosives and related matters

The Sub-Committee examined the recommendations of the Working Group on Explosives (informal document INF.73), which met concurrently from 22 to 24 June under the chairmanship of Mr. E. de Jong (Netherlands).

### 1. Modifications to Test Series 7

*Document:* ST/SG/AC.10/C.3/2010/40 (United Kingdom and United States of America)

*Informal document:* INF.73 (Report of the working group on explosives, section 7 and Annex 3)

The Sub-Committee adopted the amendments to the Manual of Tests and Criteria proposed by the Working Group, i.e.:

- amendment to the definition of Division 1.6 explosives in the UN Model Regulations
- Amendments to sections 10 and 17 of the Manual of Tests and Criteria
- New appendix 8 to be inserted in the Manual of Tests and Criteria;

For the adopted texts, see ST/SG/AC.10/C.3/2010/CRP.2/Add.2 (pages 1 and 4)

#### ***[Consequential amendments to the GHS:***

In chapter 2.1, paragraph 2.1.2.1 (f): Delete the word “detonating”

*Justification:* *It is not a requirement for articles entering Division 1.6 and the substances that they contain to be capable of detonating in the article being assessed. (see INF.73, Annex 3, para 6.)].*

### 2. Results of tests on desensitized explosives

*Document:* ST/SG/AC.10/C.3/2010/11 (Working Group)

*Informal document:* -TDG/INF.54 – GHS/INF.23 (Germany)  
INF.73 (Report of the working group on explosives, section 6)

The working group concluded that the proposals underline the need to address the issue in GHS and recommended that as much data as possible be collected and after the collection and organization of that data, that an intercessional meeting be considered, most likely in early 2011, provided that the additional data for other substances is available. The purpose of that intersessional meeting would be to consider ways to reconcile the discrepancy between GHS classification and TDG classification of these types of these substances. The working group also unanimously noted that it is not appropriate to place these types of substances in the group of explosives.

**The Sub-Committee was in favour of an informal working group meeting in 2011 to continue work on desensitized explosives**, provided test data and test results on other substances were available..

*(ST/SG/AC.10/C.3/2010/CRP.1/Add.5, para.54).*

### 3. Large-scale behaviour of fireworks

*Informal document:* INF.47 (Netherlands)

INF.73 (Report of the working group on explosives, section 11)

The Sub-Committee had no objection to the Working Group discussing the results of research on this subject and developing relevant guidelines, **provided that the GHS Sub-Committee agreed, since the work also concerned storage.**

*(ST/SG/AC.10/C.3/2010/CRP.1/Add.5, para.59).*

### 4. Criteria for excluding articles from Class 1

*Document:* ST/SG/AC.10/C.3/2010/29 (United States of America)

*Informal documents:* INF.28 (United States of America)

INF.35 (United Kingdom)

INF.73 (Report of the working group on explosives, section 5)

The Sub-Committee adopted the amendment to 2.1.1.1 (b) and new 2.1.3.6 as proposed (see ST/SG/AC.10/C.3/2010/CRP.2/Add.3, page 1 and ST/SG/AC.10/C.3/2010/CRP.2/Add.5, page 1).

### 5. Additional criteria relating to classification in Division 1.4

*Informal document:* INF.40 (Canada)

INF.73 (Report of the working group on explosives, section 13)

The Sub-Committee noted that the Working Group encouraged the expert from Canada to draft a proposal in view of his opinion that some articles currently classified in Division 1.4 and containing significant quantities of explosive substances posed a danger that could not be called “minor”.

*(ST/SG/AC.10/C.3/2010/CRP.1/Add.5, para.60).*

### 6. New DDT test and criteria for flash compositions

*Document:* ST/SG/AC.10/C.3/2010/31 (United States of America)

*Informal document:* INF.34 (United Kingdom)

INF.73 (Report of the working group on explosives, section 8)

56. The Sub-Committee recognized the value of an alternative test and noted that further work was necessary.

*(ST/SG/AC.10/C.3/2010/CRP.1/Add.5, para.56).*

## 7. Alternative to test 8 (d) for ammonium nitrate emulsions

*Informal documents:* INF.41 (Canada)  
INF.58 (Spain)  
INF.73 (Report of the working group on explosives, section 9)

The Sub-Committee noted the Working Group's interest in activities to develop a minimum burning pressure (MBP) test, and in continuing the work once the results were available.

(*ST/SG/AC.10/C.3/2010/CRP.1/Add.5, para.57*).

## 8. Use of the ARC (Accelerating Rate Calorimetry) technique as an alternative to tests 3 (c) and 8 (a)

*Informal document:* INF.42 (Canada)  
INF.73 (Report of the working group on explosives, section 10)

The Sub-Committee noted that the expert from Canada would consider how to follow up on his proposal in light of the Group's comments.

(*ST/SG/AC.10/C.3/2010/CRP.1/Add.5, para.58*).

# III. Miscellaneous classification issues

## 1. Toxic subsidiary risk for mercury

*Document:* ST/SG/AC.10/C.3/2010/6 (Germany)

It was decided to provisionally adopt the proposal by Germany to add subsidiary risk 6.1 to UN number 2809, mercury, given that, **according to the data provided, mercury meets the toxicity criteria for packing group III (acute toxicity, category 3 of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS))**.

**It was decided to put the subsidiary risk between square brackets as some delegations had doubts about the validity of the data provided.** In addition, ICAO wished to look into the implications for air transport of mercury. It was also noted that European regulation 1272/2008 (the so-called "CLP regulation") put mercury in GHS acute toxicity category 2 and therefore in packing group II (see informal document INF.12). **Delegations who had doubts about the toxicity of mercury were invited to submit data to support their position.**

(*ST/SG/AC.10/C.3/2010/CRP.1/Add.1 (paras.16 and 17)*)

## 2. Classification of potassium or sodium nitrates and mixtures thereof

*Informal documents:* INF.37 (EFMA)  
INF.43 (Secretariat)  
INF.46 (Netherlands)  
INF.31 (Secretariat) - GHS/INF.12  
INF.64 (Chile)

Referring to the discussions that took place at the last session (ST/SG/AC.10/C.3/72, paras 99-102) several delegations expressed concern at the decision of IMO to allow, through

special provision 964 of the IMDG Code, exemption of sodium or potassium nitrates or mixtures thereof when transported in non-friable prills or granules forms and when they do not meet the criteria of sub-section 34.4.1 of the Manual of Tests and Criteria for oxidizing solid substances. They recalled that special provision 223 was not applicable to UN Nos 1486, 1498 and 1499. The Model Regulations, in paragraph 2.5.2.1.1 made it clear that in the event of divergence between test results and known experience, judgement based on known experience shall take precedence over test results, and that when substances of Division 5.1 are listed in the Dangerous Goods List, their reclassification in accordance with the criteria shall be undertaken only when this is necessary for safety. Some of them considered also that exemption of these substances was detrimental not only to safety, but also to security since they may be considered as precursors for the manufacture of explosives.

It was underlined nevertheless that the IMO decision was not unique, since, according to the European land transport regulations (RID/ADR/ADN), any substance of divisions 4.1, 4.2, 4.3 or 5.1 may be considered as non-dangerous if the criteria of the Manual of Tests and Criteria are not met. **This led to the question of interpretation of "known experience" in the more general context of the GHS, since this concept is also recognized in the GHS.** Although it is known from past experience that these substances may be dangerous, the Manual of Test and Criteria indicates clearly that the hazardous properties depend on the particle size, and the current experience with this special form is not necessarily comparable to experience with other forms.

Many experts did not support the introduction of such a provision in the Model Regulations but the Sub-Committee noted also that there was currently no proposal to amend the Model Regulations in this respect.

The Sub-Committee noted also that laboratory experts (INF.31) felt that the test method for oxidizing solids could be improved, first because the reference substance (potassium bromate) presents health hazards (carcinogenicity and acute oral toxicity) and secondly because of the subjective measurement of the burning time, which leads to different results depending on the operator. They suggested to use calcium peroxide as a reference substance for the test, and to improve the test method itself by a more objective method based on a gravimetric procedure.

**The Sub-Committee agreed that this issue should be included in the programme of work for the next biennium, subject to the concurrence of the GHS Sub-Committee.** The concept of "known experience" should also be clarified since it could lead to different classifications. Other factors influencing classification such as friability and particle size should also be discussed. Modal and sectoral organizations were invited to contribute to this work.

*(ST/SG/AC.10/C.3/2010/CRP.1/Add.7 (paras.78 to 82))*

#### IV. Further alignment of corrosivity criteria in Class 8 of the UN Model Regulations with GHS criteria

*Document:* ST/SG/AC.10/C.3/2010/10 (Netherlands)

*Informal documents:* INF.7 (Netherlands)  
INF.11 (AISE)  
INF.33 (CEFIC)  
INF.39 (United Kingdom)

With the aim to fully align the Model Regulations classification criteria with the GHS criteria, the expert from the Netherlands proposed to introduce in Chapter 2.8 of the Model Regulations text relating to skin corrosion criteria identical, or referring to, the text contained in chapter 3.2 of the GHS for GHS skin corrosion category 1, including a correlation between transport packing groups I, II and III and GHS sub-categories 1A, 1B, 1C and notes on the application of classification methods alternative to those based on *in vitro* or *in vivo* testing such, as the use of extreme PH values, bridging principles and mixtures calculations.

Most experts considered that the criteria contained in Chapter 2.8 were already consistent with those of the GHS for sub-categories 1A, 1B and 1C, in the sense that these sub-categories had been introduced in the GHS to take account of the transport packing group criteria for substances of GHS category 1. Nevertheless, some experts considered that the criteria were not exactly the same because the transport criteria for skin corrosion referred to full thickness destruction of skin, while the GHS criteria referred only to destruction of skin tissue, namely visible necrosis through the epidermis and into the dermis.

Several experts questioned the relevance of introducing alternative methods and in particular reference to extreme pH values, which they considered as non-representative of the real skin corrosion potential of chemicals and should not serve as a basis for determination of packing groups, bearing in mind the cost implications in terms of transport equipment to be used. The introduction of a correspondence table between packing groups and sub-categories of GHS category 1 would be very confusing e.g. information on pH values included in safety data sheets could be misinterpreted. Furthermore there could be legal problems linked to contradictory classifications required by different instruments of mandatory application such as transport regulations and the European CLP Regulation when assignment to sub-categories were based on such alternative methods in one of these instruments and on *in vivo* or *in vitro* testing methods in another one.

Several experts noted that Chapter 3.2 of the GHS on skin corrosion criteria was under review to take account of these problems, and they felt that it was premature to introduce now in the Model Regulations text there was known to be likely to cause problems.

**As a compromise solution, the Sub-Committee agreed to invite the expert from the Netherlands to prepare a new proposal that would introduce in the Model Regulations the concepts of bridging principles and mixture calculations, but by referring to packing group rather than to GHS sub-categories 1A, 1B and 1C**

*(ST/SG/AC.10/C.3/2010/CRP.1/Add.11 (paras.108 to 112))*

## V. Hazard communication for supply and use of aerosols

*Document:* ST/SG/AC.10/C.3/2010/17 - ST/SG/AC.10/C.4/2010/3 (United Kingdom and FEA)

**There was general support for the proposal to amend the GHS, but several experts expressed concern at the proposal to indicate the percentage of flammable components on receptacles containing non-flammable aerosol since this could convey a misleading message.**

*(ST/SG/AC.10/C.3/2010/CRP.1/Add.11 (para.113))*

## VI. Comparison between classification of dangerous goods in the Model Regulations and the European CLP regulations.

*Informal documents:* INF.12 (Secretariat)

The Sub-Committee thanked the secretariat for the useful work of comparison which showed numerous discrepancies between different legal instruments based on the GHS and the necessity to agree upon harmonized classification of substances which are most commonly carried in international trade.

**Should the GHS Sub-Committee decide to develop a harmonized classification list, the Sub-Committee would be willing to cooperate.**

*(ST/SG/AC.10/C.3/2010/CRP.1/Add.11 (paras.114-115))*

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