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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

**REPORT OF THE SUB-COMMITTEE OF EXPERTS ON THE  
GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF  
CHEMICALS ON ITS SIXTEENTH SESSION**  
(Geneva, 10 – 12 December 2008)

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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 sixteenth session from 10 to 12 (a.m.) December 2008, with Ms. Kim Headrick (Canada) as Chairperson and Mr. Roque Puiatti (Brazil) as Vice-Chairperson.

2. Experts from the following countries took part in the session: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, New Zealand, Norway, Poland, Portugal, Qatar, Serbia, South Africa, Spain, Sweden, United Kingdom of Great Britain and Northern Ireland and United States of America.

3. Under rule 72 of the rules of procedure of the Economic and Social Council, observers from the following countries also took part: Kenya, Republic of Korea, Russian Federation, Slovenia, Switzerland and Viet Nam.

4. Representatives of the United Nations Institute for Training and Research (UNITAR) and the International Maritime Organization (IMO) were present.

5. The following intergovernmental organizations were also represented: European Commission (EC) and Organization for Economic Co-operation and Development (OECD).

6. Representatives of the following non-governmental organizations took part in the discussion of items of concern to their organizations: Association of European Adhesive and Sealant Manufacturers (FEICA); Compressed Gas Association (CGA); Croplife International, Dangerous Goods Advisory Council (DGAC), European Chemical Industry Council (CEFIC), European Fertilizers Manufacturer's Association (EFMA), European Industrial Gases Association (EIGA), Federation of European Aerosol Associations (FEA), Industrial Federation of Paints and Coats of Mercosul (IFPCM), International Association for Soaps, Detergents and Maintenance Products (AISE), International Council of Chemical Associations (ICCA), International Dangerous Goods and Containers Association (IDGCA), International Organization for Standardization (ISO), International Paint and Printing Ink Council (IPPIC), International Petroleum Industry Environmental Conservation Association (IPIECA), Responsible Container Management Association of Southern Africa (RCMASA), Soap and Detergent Association (SDA) and Sporting Arms and Ammunition Manufacturer's Institute (SAAMI).

## II. ADOPTION OF THE AGENDA (agenda item 1)

Documents: ST/SG/AC.10/C.4/31 (Provisional agenda)  
ST/SG/AC.10/C.4/31/Add.1 (List of documents and annotations)

Informal documents: INF.1 (List of documents)  
INF.2 (List of documents under agenda item)  
INF.9 (Informal working groups: 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.43. At the request of the Chairperson, document ST/SG/AC.10/C.4/2004/22 was withdrawn.

### **III. UPDATING OF THE SECOND REVISED EDITION OF THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS) (agenda item 2)**

#### **A. General**

##### **1. Proposals of amendments and/or corrections relating to texts adopted at the previous three sessions**

Documents: ST/SG/AC.10/C.4/2008/14 (Secretariat)  
ST/SG/AC.10/C.4/2008/14/Add.1 (Secretariat)

Informal document: INF.4 (Secretariat)

8. The Sub-Committee confirmed the adoption of the amendments listed in ST/SG/AC.10/C.4/2008/14 with one correction to replace all references to Annex V to Directive 67/548/EEC, which has been repealed, by a reference to Council Regulation (EC) No. 440/2008<sup>1</sup> of 30 May 2008 (see annex I).

9. The corrections and amendments listed in document ST/SG/AC.10/C.4/2008/14 as well as the additional consequential amendments to the GHS text proposed by the secretariat in document ST/SG/AC.10/C.4/2008/14/Add.1 were also adopted (see annex I).

##### **2. Outcome of the work of the Sub-Committee of Experts on the Transport of Dangerous Goods (TDG Sub-Committee) on its thirty-fourth session**

Informal document: INF.36 (Secretariat)

10. The Chairman of the TDG Sub-Committee informed the Sub-Committee about the outcome of the discussions of the TDG Sub-Committee on issues relating to the GHS, regarding in particular items 2 (b), 2 (e), 2 (f), 2 (g), 2 (h) and 2 (i) in INF.36. He also introduced the recommendations made by the TDG Sub-Committee for consequential amendments to the GHS (items 2 (a), 2 (c) and 2 (d)).

#### **B. Physical hazards**

##### **1. Classification of ammonium nitrate emulsions, suspensions or gels (Chapter 2.1)**

Document: ST/SG/AC.10/C.4/2008/16 (Secretariat)

11. The proposal for the amendment of figure 2.1.4 in Chapter 2.1 was adopted (see annex I).

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<sup>1</sup> Council Regulation (EC) No 440/2008 of 30 May 2008 laying down test methods pursuant to Regulation (EC) No 1907/2006 of the European Parliament and of the Council on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

## **2. Note to the definition of self-heating substances and mixtures (Chapter 2.11)**

Document: ST/SG/AC.10/C.4/2008/20 (Germany)

Informal documents: INF.28 (Germany)  
INF.36, item 2 (a) (Secretariat)

12. The Sub-Committee endorsed the recommendation made by the TDG Sub-Committee to amend the note to the definition of self-heating substances and mixtures in Chapter 2.11. The proposal contained in annex 1 to INF.36 was adopted with one editorial correction (see annex I).

13. The Sub-Committee also agreed to replace (in the English version of the text) the term “spontaneous ignition temperature” with “self-ignition temperature” in note 2 to table 2.11.1 (see annex I).

## **3. Classification of flammable aerosols (Chapter 2.3)**

Document: ST/SG/AC.10/C.4/2008/25 (Sweden)

Informal document: INF.11 (FEA)

14. Most experts were of the opinion that aerosols meeting the classification criteria in Chapter 2.3 of the GHS for flammability should not be, in addition, subject to the classification and labelling criteria applicable to flammable gases, flammable liquids or flammable solids in Chapters 2.2, 2.6 and 2.7 respectively.

15. A few experts raised concerns with respect to the classification of aerosols entirely filled with flammable gases. They said that those aerosols should continue to be classified and transported as flammable gases and not as flammable aerosols and thought that the proposed amendment could change this interpretation.

16. Some experts felt that the exemption from “gases under pressure” in the proposal in INF.11 was not adequate in the context of flammable aerosols. One expert noted that the definition of aerosols in Chapter 2.3 covered also aerosols containing compressed gases and explained that these aerosols should be classified and labelled as gases under pressure.

17. Others pointed out that transport regulations contained provisions for the establishment of a precedence of hazards and said that similar provisions may be needed for GHS hazard classes. One expert, however, explained that the precedence of hazards used in transport regulations was risk-based and noted that it might not be possible, for GHS purposes, to find a common approach suitable for all sectors, considering that each sector may have different specific risks which have to be taken into account. Experts who considered that the Sub-Committee should address this issue during the next biennium were invited to define the scope of the work.

18. The Sub-Committee adopted the proposal in document ST/SG/AC.10/C.4/2008/25, without amendments, and in INF.11, with some modifications (see annex I).

#### **4. Test series 7**

Informal document: INF.15 (United Kingdom)

19. The Sub-Committee noted the announcement by the expert from the United Kingdom for a meeting of the informal working group on Test Series 7, to be held in Bath on 17 and 18 March. Interested members of the GHS Sub-Committee as well as of the TDG Sub-Committee were invited to attend.

#### **5. Chemically unstable gases**

Informal documents: INF.19 (Germany)  
INF.36, item 2 (b) (Secretariat)

20. The Sub-Committee took note of the progress of the work of the informal working group on chemically unstable gases and agreed that the work should continue during the next biennium.

#### **6. Screening test for substances which may have explosive properties**

Informal document: INF.36, item 2 (d) (Secretariat)

21. The Sub-Committee endorsed the recommendation of the TDG Sub-Committee to amend the note in 2.1.4.2.1 of the GHS to specify the conditions under which it is not necessary to conduct certain Series 1 or Series 2 tests (see annex I).

#### **7. Additional tests for the classification of 1.4S explosives**

Informal document: INF.36, item 2 (c) (Secretariat)

22. The Sub-Committee endorsed the recommendation of the TDG Sub-Committee to amend Figure 2.1.3 in Chapter 2.1 of the GHS, in accordance with the amendments to the procedure for the classification of 1.4S explosives in Section 10 of the Manual of Tests and Criteria adopted by the TDG Sub-Committee (see annex I).

### **C. Health hazards**

#### **1. Strong versus weak sensitizers: amendments to Chapter 3.4**

Documents: ST/SG/AC.10/C.4/2008/18 (Secretariat)  
ST/SG/AC.10/C.4/2008/18/Add.1 (Secretariat)

Informal documents: INF.3 (Secretariat)  
INF.23 (Australia)

23. The proposals for amendment to Chapter 3.4 contained in the documents from the secretariat were adopted with a minor editorial change to paragraph 3.4.2.1.1.3 (see annex I).

24. Regarding the inconsistencies in the hazard statements for respiratory and skin sensitization currently used in the GHS, as noted by the secretariat in annex III to document

ST/SG/AC.10/C.4/2008/18/Add.1, the Sub-Committee agreed that only the statements used in Chapter 3.4 were deemed to be correct (see annex I).

25. The proposal in document INF.23 for the amendment of Table 3.4.3, to make reference to sub-categories 1A and 1B in the cells containing the cut-off values was not adopted. The expert from Germany said that sub-categorization was based on potency and explained that the OECD expert group who developed the criteria had decided to refer only to Category 1 because data for the sub-categorization of mixtures in sub-categories 1A or 1B was not generally available.

#### **D. Environmental hazards**

##### **1. Guidance on transformation/dissolution of metals and metal compounds in aqueous media**

Document: ST/SG/AC.10/C.4/2008/17 (OECD)

26. The Sub-Committee adopted the proposed amendments to Chapter 4.1 and annex 10 of the GHS without modifications (see annex I).

##### **2. Rapid degradability: amendments to paragraph 4.1.2.10.3**

Document: ST/SG/AC.10/C.4/2008/27 (CEFIC, AISE and SDA)

Informal documents: INF.17 (CEFIC, AISE and SDA)  
INF.40 (CEFIC, AISE and SDA)  
INF.40/Rev.1 (CEFIC, AISE and SDA)

27. Most experts expressed concern about the fact that the proposed amendment to 4.1.2.10.3 (a) would allow all multi-component substances to be exempted from the 10-day window criteria used for the determination of rapid degradability, while the applicable OECD Test Guideline specifically mentioned that the test should only be used to examine the ready biodegradability of pure chemicals or mixtures of structurally similar chemicals such as oils and surfactants.

28. Some experts volunteered to draft a new text, circulated as INF.40/Rev.1, which was adopted by the Sub-Committee without modifications (see annex I).

##### **3. Ozone depleting chemicals: amendments to Annex 3**

Document: ST/SG/AC.10/C.4/2008/15 (Secretariat)

29. The proposed amendments to annex 3 of the GHS were adopted, with the replacement of “manufacturer” with “manufacturer/supplier” in P502 (see annex I).

#### **E. Miscellaneous**

##### **1. Draft corrections to the GHS**

Informal documents: INF.8 (Secretariat)  
INF.37 (United States of America)

30. The Sub-Committee adopted the corrections listed in part 1 of INF.8. The correction to table A2.18 was adopted as amended by INF.37 (see annex I).

31. The Sub-Committee also agreed to slightly modify the text of paragraph 1.4.10.5.2 (a) (see annex I) to make it consistent with the current use of the signal word “warning” which is assigned to the most severe hazard categories of some health and environmental hazards.

32. The Sub-Committee took note of the update of the references to some web pages in the GHS. Experts were invited to provide to the secretariat the updated links for those web pages which are no longer available so as they can be corrected before the publication of the next revised edition of the GHS.

33. The corrections applicable to Chapter 1.5 and Annex 2 in INF.37 were adopted (see annex I). The correction to table 3.1.1 was not adopted. However, the Sub-Committee agreed on a correction to the column for Category 5 in that table on the basis of a verbal proposal made by the expert from Norway (see annex I).

## **2. Concentration units for ingredients in mixtures**

Informal document: INF.14 (EIGA)

34. The representative of EIGA explained that the lack of consistency in the GHS as regards the units used to express the concentration of ingredients in mixtures caused problems for classification of gases, and proposed that such concentrations be expressed in volume/volume for gases.

35. The expert from France drew attention to the fact that this could depend on the context, since weight percentages would be relevant when evaluating the hazard to the aquatic environment when a gas is dissolved in water, while volume/volume concentrations would indeed be more relevant when evaluating hazards to the ozone layer.

36. The representative of EIGA was invited to revise his proposal taking account of the comments received.

## **IV. HAZARD COMMUNICATION ISSUES (agenda item 3)**

### **A. Revision of Annexes 1, 2 and 3: Combined hazard and precautionary statements**

Document: ST/SG/AC.10/C.4/2008/24 (United Kingdom)

Informal documents: INF.6 (Secretariat)  
INF.24 (United Kingdom)

37. The Sub-Committee adopted, without modifications, the proposal in document ST/SG/AC.10/C.4/2008/24 for a revised text for paragraph 1.4.10.5.3.3. The new paragraphs to be inserted in annex 3 of the GHS were adopted as amended by the secretariat in INF.6 (see annex I).

38. Regarding the new entries for combined hazard statements, the Sub-Committee could not reach an agreement on the combined statement for respiratory tract irritation and narcotic effects. One expert considered that combining both toxicity mechanisms and criteria in one single statement could lead to a misunderstanding of the hazard and result in an inappropriate medical



response in case of emergency. Therefore, Table A3.1.2 in document ST/SG/AC.10/C.4/2008/24 was adopted without the last entry (code H335+H336) (see annex I).

### **B. Labelling of very small packagings**

Document: ST/SG/AC.10/C.4/2008/26 (CEFIC)

39. The Sub-Committee took note of the outcome of the work of the informal correspondence group and adopted the general principles for the labelling of very small packagings in paragraph 4 of the document, as amended (see annex I).

### **C. Consideration of issues relevant to safety data sheets by the IMO Sub-Committee on bulk, liquids and gases (BLG)**

Informal document: INF.13 (IPIECA)

40. Following the introduction made by the representative of IPIECA, the representative of IMO informed the Sub-Committee that a correspondence group has been established within the BLG Sub-Committee, to review Annex II to resolution MSC.150(77) and determine the appropriate information to be provided in the Safety Data Sheet (SDS). The correspondence group will provide a report at the next session of the BLG Sub-Committee in March 2009.

41. He explained that the information provided by the group would be used to decide whether the specific information items needed for the maritime sector could be integrated in the GHS SDS or whether specific guidance would have to be developed to address the specific needs of that sector.

42. Several experts expressed concern about the possible proliferation of sector specific or substance specific guidance in the future.

43. The representative of IMO noted that, in any event, the intent of his organization was to fully utilize the GHS guidance in developing SDS for cargoes and marine fuel oils which are subject to Annex I of the International Convention for the Prevention of Pollution from Ships, 1973, as modified by the Protocol of 1978 relating thereto (MARPOL 73/78).

44. The Sub-Committee agreed to wait for the results of the work of the IMO BLG Sub-Committee correspondence group on this issue.

### **D. Symbol for the hazards to the aquatic environment**

Informal document: INF.31 (Secretariat)

45. The Sub-Committee noted that the unintended differences detected in the symbol for the hazards to the aquatic environment which is reproduced in different parts of the GHS could cause problems with the implementation of the GHS in some sectors and agreed that they should be eliminated.

46. After some consultations with experts representing transport and supply and use sectors, the Sub-Committee concluded that the symbol which seemed to be easier to implement in all

sectors was the one reproduced on the right hand-side of the second row of the table in INF.31, as amended (see annex I).

47. The secretariat was requested to make the corrected symbol available on the GHS pictograms webpage of the website of the United Nations Economic Commission for Europe (UNECE) as soon as possible.

#### **E. Hazard symbols: harmonization between ISO 7010 and GHS**

Informal document: INF.7 (Secretariat)

48. The Sub-Committee welcomed the invitation from the Chairman of the ISO Technical Committee TC145/SC2 for future cooperation between the two bodies with a view to increase harmonization at the maximum extent possible.

49. However, the Sub-Committee felt that replacing the GHS symbols by those of ISO 7010 at this point would have major economic implications for most sectors (and for transport of dangerous goods in particular since transport symbols for physical hazards are fully harmonized worldwide with those of the GHS) without being justified from a safety point of view.

50. Noting that the ISO 7010 standard was revised every two years, some experts suggested the TC145/SC2 to consider revising the symbols used therein to harmonize them with those of the GHS.

### **V. DEVELOPMENT OF GUIDANCE ON THE APPLICATION OF GHS CRITERIA** (agenda item 4)

#### **A. Classification of mixtures**

Document: ST/SG/AC.10/C.4/2008/23 (United States of America)

Informal documents: INF.5 (Secretariat)  
INF.39 (United States of America)

51. The Sub-Committee adopted the miscellaneous amendments to the GHS text contained in annex 1 to document ST/SG/AC.10/C.4/2008/23, as amended by INF.39, with some additional modifications (see annex I).

52. It was agreed that the examples in annex 2 to document ST/SG/AC.10/C.4/2008/23 could be used as part of GHS guidance or training materials.

#### **B. Application of the GHS to substances of unknown or variable composition, complex reaction products or biological materials (UVCBs) in specific petroleum substances**

Informal document: INF.12 (IPIECA)

53. The Sub-Committee took note of the progress of the work and the representative of IPIECA was invited to revise the proposed draft guidance taking account of the comments received.

## VI. IMPLEMENTATION OF THE GHS (agenda item 5)

### A. Reports from governments or organizations

#### 1. European Commission

Informal document: INF.26 (European Commission)

54. The representative of the European Commission announced that the Regulation on classification, labelling and packaging of substances and mixtures (CLP regulation) which will implement the GHS in the 27 Member States of the European Union, was adopted by the Council on 28 November. She nevertheless noted that it should not be considered officially adopted until its publication in the Official Journal of the European Union in all official languages, which was foreseen for 31 December 2008<sup>2</sup>.

55. The new regulation will enter into force 20 days after its publication in the Official Journal and it will then be possible to start applying it, although a transitional period had been provided until 1 December 2010 for substances and 1 June 2015 for mixtures. It is expected that other pieces of legislation would be amended to take account of the new rules for classification and labelling. Annex II of the Regulation concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)<sup>3</sup> will also be fully aligned with the provisions of the GHS for SDS.

56. She also mentioned that guidance on the application of the GHS criteria was being developed and was expected to be finalized before September 2009.

57. Regarding transport regulations she informed the Sub-Committee about the publication of Directive 2008/68/EC<sup>4</sup> in the Official Journal of the European Union on 30 September 2008. This new directive makes the provisions of the RID/ADR/ADN, which are legal instruments applicable to international transport of dangerous goods by rail, road and inland waterways, of mandatory application to domestic traffic in EU Member States.

58. A member of the secretariat noted that the ADN applied, in addition to the GHS hazard classes and categories applicable to transport in packaged form in accordance with the UN Model Regulations on the Transport of Dangerous Goods, some other hazard classes and

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<sup>2</sup> Note by the secretariat: The regulation was effectively published on 31 December 2008. *Regulation (EC) No 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006 (1). OJ L353, 31.12.2008, Volume 51.*

<sup>3</sup> *Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.*

<sup>4</sup> *Directive 2008/68/EC of the European Parliament and of the Council of 24 September 2008 on the inland transport of dangerous goods.*

categories of the GHS (such as Carcinogenicity, Mutagenicity, Toxic to Reproduction, or Categories Chronic 3 and 4 for hazardous to the aquatic environment) to the transport of liquid dangerous goods in bulk in tank-vessels.

## **2. Brazil**

Informal document: INF.29 (Brazil)

59. The Sub-Committee noted the information on the various capacity building and awareness raising activities held in Brazil since July 2008. It was also noted that the publication of the Portuguese version of the first revised edition of the GHS is expected for the first quarter of 2009 and that national standards on terminology, classification, labelling and Safety Data Sheets based on the GHS will be published soon.

## **3. Republic of Korea**

Informal document: INF.38 (Republic of Korea)

60. The observer from the Republic of Korea informed the Sub-Committee that three major pieces of legislation have already been amended in accordance with the GHS: the Industrial Safety and Health Act (dealing with classification, labelling and Safety Data Sheets) in December 2006; the Toxic Chemical Control Act, in November 2007; and the Dangerous Goods Safety Management Act, in November 2008.

61. The Sub-Committee noted that the transitional period for classification and labelling of substances and mixtures according to the GHS in the Republic of Korea is 30 June 2010 for substances and 30 June 2013 for mixtures (30 June 2014 for mixtures covered by the Toxic Chemical Control Act).

62. It was also noted that following the building block approach, not all the hazard categories were implemented and that a number of activities with regards to the development of tools or guidance for the classification of substances including non mandatory classification and preparation of SDS and labels for 6314 substances had already been finished according to the GHS and were available on the website of the Korean Occupational Safety and Health Agency (KOSHA)<sup>5</sup>.

## **4. Japan**

63. The expert from Japan announced that about 1500 chemicals had already been classified according to the GHS and that the results of the classification were available, in English, on the website of the National Institute of Technology and Evaluation (NITE)<sup>6</sup>.

## **5. Switzerland**

64. The observer from Switzerland informed the Sub-Committee that the amendment of the Swiss chemicals ordinance to take account of the GHS was ongoing. He explained that the

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<sup>5</sup> At the time of the session : <http://www.kosha.or.kr/eng/english.htm>

<sup>6</sup> At the time of the session: <http://www.nite.go.jp/index-e.htm>

revised ordinance would allow Swiss manufacturers/importers to classify and label their chemicals either according to the existing system or in accordance with the GHS. He noted, however that at the first stage, this option would only be applicable to chemicals for professional users, although consumer chemicals would be incorporated at a later stage.

65. The observer from Switzerland also announced that at the end of the transitional periods, all chemicals (including consumer products, biocides and plant protection products) would have to be classified and labelled according to the GHS. Finally, he mentioned that it was expected that a number of Swiss downstream legislation acts would also be amended according to the GHS.

## **B. Cooperation with other international organizations**

### **1. World Health Organization**

Informal document: INF.33 (WHO)

66. The Sub-Committee noted the progress report on the activities carried out by the World Health Organization to implement the GHS.

### **2. United Nations Environment Programme: Basel Convention**

Informal document: INF.30 (Secretariat)

67. The Sub-Committee noted decisions IX/20 and IX/32 taken by the Conference of the Parties to the Basel Convention at its ninth meeting regarding the work of the Joint Correspondence Group.

68. The Sub-Committee agreed that the item concerning the cooperation with the Basel Convention on matters of common concern should be kept in its programme of work for the next biennium.

## **C. Other implementation issues**

### **1. Work of the informal working group on implementation issues**

Documents: ST/SG/AC.10/C.4/2008/22 (Australia on behalf of the informal working group)  
ST/SG/AC.10/C.4/2008/28 (Australia, Secretariat)

Informal document: INF.43 (Australia on behalf of the informal working group)

69. The Sub-Committee endorsed the recommendations made by the informal working group (documents ST/SG/AC.10/C.4/2008/22 and INF.43).

70. The Sub-Committee also adopted the following amendments to the GHS, proposed by the informal working group in document ST/SG/AC.10/C.4/2008/22:

- Issue 1.5: Amendment to paragraph 3.1.3.6.2.2, with one modification (see annex I);

- Issue 1.6: Use of the term “structure-activity relationship” instead of “structure-property relationship” wherever it appears in the GHS (see annex I);
- Issue 3.13: New paragraph 3.4.1.5 (see annex I);

71. Regarding the monitoring of implementation activities and legislative changes for GHS implementation, the Sub-Committee agreed that this information should be communicated to the secretariat so that it can be made available on the GHS implementation webpage.

72. The Sub-Committee also agreed that the informal working group on implementation should continue its work to identify issues and assist the Sub-Committee in its role in implementing the GHS (see annex II). The proposals for further work identified in document ST/SG/AC.10/C.4/2008/22) were agreed.

## **2. Terminology issues: Use of the term “chemicals” in the GHS**

Informal document: INF.10 (Secretariat)

73. The Sub-Committee felt that the inclusion of a definition for “chemical” in Chapter 1.2 needed further consideration and the proposal in paragraph 2 of INF.10 was not adopted. It was recognised, however, that the amendments proposed in paragraph 7 were relevant and therefore the Sub-Committee decided to adopt them without modifications (see annex I).

## **VII. CAPACITY BUILDING (agenda item 6)**

Informal document: INF.27 (UNITAR)

74. The representative of UNITAR provided an update on GHS capacity building activities held in the second semester of 2008. He informed the Sub-Committee that Cambodia and Laos had completed their national GHS implementation strategy while Viet Nam had completed comprehensibility testing training and was finalizing the translation of the GHS into Vietnamese.

75. Regarding future activities, he said that a number of national and regional workshops were expected to be held in 2009 (e.g. Jamaica, Uruguay and China). He also announced that a request by Zambia for funding through the Strategic Approach to International Chemicals Management (SAICM) Quick Start Program Trust Fund to support further GHS capacity building activities in the country had been accepted.

76. On GHS guidance, training and resource materials he announced that UNITAR and the Basel Convention Secretariat agreed to develop adapted training materials relevant to the Basel Convention and the Africa Region. He also mentioned the forthcoming publication of a guide prepared by the Inter-Organization Programme for the Sound Management of Chemicals (IOMC) to assist countries with the transition phase for GHS implementation.

77. The expert from China informed the Sub-Committee about a National GHS Planning meeting organized by its Government (with the support of UNITAR, ILO and the Government of Switzerland) in Beijing in November 2008 with the participation of several ministries, agencies and representatives from transport, supply and use and consumer products sectors.

## **VIII. PROGRAMME OF WORK FOR THE BIENNIUM 2009-2010** (agenda item 7)

Documents: ST/SG/AC.10/C.4/2008/19 (France and Germany)  
ST/SG/AC.10/C.4/2008/21 (Australia, Austria, France, New Zealand, Slovenia and Spain), paras. 15-18  
ST/SG/AC.10/C.4/2008/23 (United States of America), Annex 3  
ST/SG/AC.10/C.4/2008/24 (United Kingdom), paras. 23-26  
ST/SG/AC.10/C.4/2008/26 (CEFIC), para.5

Informal documents: INF.18 (Germany)  
INF.21 (CropLife)  
INF.25 (Sweden)  
INF.20 (Canada)  
INF.12 (IPIECA), para. 9  
INF.16 (France)  
INF.19 (Germany)  
INF.22 (France)  
INF.35 (Secretariat)  
INF.39 (United States of America)  
INF.41 (CEFIC)  
INF.42 (Germany)

### **A. Terrestrial environmental hazards**

78. Although there was some support for keeping the development of classification and labelling criteria for hazardous to the terrestrial environment in the programme of work for the next biennium, some experts and non-governmental organizations felt that this was not a priority and preferred not to include this item.

79. Since there was no consensus on the proposal, the Sub-Committee agreed, as a compromise solution, that this issue would not be included in its programme of work for 2009-2010. However, to enable progress for the future, a correspondence working group led by Spain, to work on hazards to the terrestrial environment was established.

### **B. Guidance on the application of the GHS to petroleum substances**

80. The Sub-Committee agreed not to include the development of guidance on this issue in its programme of work for the next biennium on the grounds that the scope of the proposed guidance was very much limited to a specific sector and very specific substances and that the ownership of the developed guidance would stay with the industry and not with the Sub-Committee

81. Nevertheless, the Sub-Committee recognized the need for further discussion on its relationship to sector/substance specific guidance.

82. The Sub-Committee welcomed the opportunity to be kept informed of the progress of the work and noted that IPIECA will present final guidance for the Sub-Committee's consideration at its seventeenth session.

### **C. Nanomaterials**

83. The Sub-Committee did not include this item in its programme of work. However, the expert from France was invited to provide further information to the Sub-Committee on this issue.

### **D. Programme of work**

84. After consideration of the various proposals, the Sub-Committee adopted its programme of work for the biennium 2009-2010 on the basis of a draft prepared by the secretariat, with some changes (see annex II).

## **IX. DRAFT RESOLUTION 2009/ ... OF THE ECONOMIC AND SOCIAL COUNCIL** (agenda item 8)

Informal document: INF.32 (Secretariat)

85. The Sub-Committee adopted the draft ECOSOC resolution 2009/... on the basis of a draft prepared by the secretariat. The final resolution, as adopted by the Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals, is reproduced as annex IV to the report of the Committee on its fourth session circulated under the symbol ST/SG/AC.10/36).

## **X. ELECTION OF OFFICERS FOR THE BIENNIUM 2009-2010** (agenda item 9)

86. Mr. Roque Puiatti, Vice-Chair of the Sub-Committee since 2001, informed the Sub-Committee that he would not be able to continue performing his duties as Vice-Chairman during the next biennium. The Sub-Committee expressed its deep appreciation for his work as vice-chairman and for his efforts in promoting the GHS implementation in Brazil.

87. The Sub-Committee re-elected Mrs. K. Headrick (Canada) as Chairperson and elected Mr. T. Gebel (Germany) and Ms. Elsie Snyman (South Africa) as Vice-Chairpersons.

## **XI. OTHER BUSINESS** (agenda item 10)

Informal document: INF.34 (RCMASA)

88. The Sub-Committee noted that RCMASA would host an international transport and environmental conference in Durban from 2-4 March 2009.

## **XII. ADOPTION OF THE REPORT** (agenda item 11)

89. The Sub-Committee adopted the report on its sixteenth session and the annexes thereto on the basis of a draft prepared by the secretariat.



## Annex I

### DRAFT AMENDMENTS AND CORRECTIONS TO THE SECOND REVISED EDITION OF THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS)

#### Part 1: Draft amendments adopted by the Sub-Committee at its sixteenth session

(a) *Draft amendments to the texts adopted by the Sub-Committee at its three previous sessions*

Document ST/SG/AC.10/C.4/2008/14: adopted as amended in -/C.4/2008/14/Add.1 with the following additional modification:

2.6.4.2.6 Amend the text under "Further acceptable methods", to read as follows:

"Method A2 as described in Part A of the Annex to Council Regulation (EC) No 440/2008<sup>5</sup>"

Add a new footnote 5 to read as follows:

<sup>5</sup> *Council Regulation (EC) No 440/2008 of 30 May 2008 laying down test methods pursuant to Regulation (EC) No 1907/2006 on the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)".*

Document ST/SG/AC.10/C.4/2008/14/Add.1: adopted.

(b) *Draft amendments to the second revised edition of the GHS*

#### Chapter 1.4

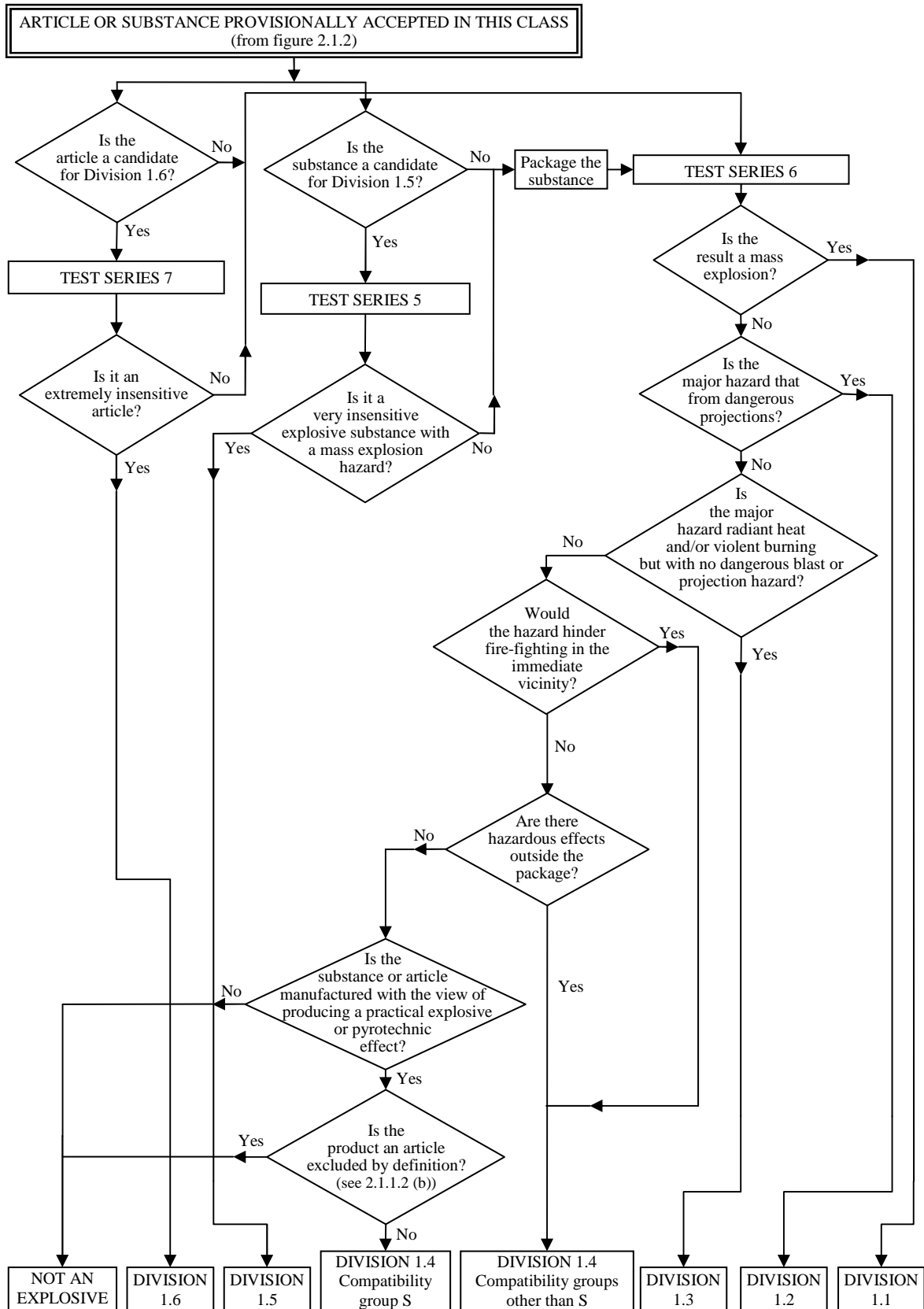
Document ST/SG/AC.10/C.4/2008/26: proposal in paragraph 4 adopted with the following modifications:

1.4.10.5.4.4 (b) (iii) Insert "official" before "language".

1.4.10.5.4.4 (c) Replace the first "and/or" with "and".

#### Chapter 2.1

Figure 2.1.3 Replace with the following:



2.1.4.2.1 In the NOTE, add the following new sentence at the end:

"For organic substances and mixtures with a decomposition energy of 800 J/g or more, tests Series 1 Type (a) and 2 Type (a) do not have to be performed if the outcome of the ballistic mortar MK.IIID test (F.1), or ballistic mortar test (F.2) or the BAM Trauzl test (F.3) with initiation by a standard No.8 detonator (see Appendix 1 to the *Manual of Tests and Criteria*) is "no". In this case, the results of test 1(a) and 2(a) are deemed to be "-".

(Ref. doc.: INF.36)

Figure 2.1.4 Amendments in document ST/SG/AC.10/C.4/2008/16 adopted without modifications.

### **Chapters 2.2, 2.6 and 2.7**

Document ST/SG/AC.10/C.4/2008/25: adopted without modifications.

#### **Chapter 2.3**

2.3.2.1 Replace "NOTE" with "NOTE 1". Add a new NOTE 2 to read as follows:

**"NOTE 2:** *Flammable aerosols do not fall additionally within the scope of chapters 2.2 (flammable gases), 2.6 (flammable liquids) or 2.7 (flammable solids)."*

(Ref. doc.: INF.11 as amended)

#### **Chapter 2.11**

2.11.1 Amend the NOTE to read as follows:

**"NOTE:** *Self-heating of a substance or mixture is a process where the gradual reaction of that substance or mixture with oxygen (in air) generates heat. If the rate of heat production exceeds the rate of heat loss, then the temperature of the substance or mixture will rise which, after an induction time, may lead to self-ignition and combustion."*

(Ref. doc.: ST/SG/AC.10/C.4/2008/20 and INF.36 as amended)

Table 2.11.1 In NOTE 2, last sentence, replace "spontaneous ignition temperature" with "self-ignition temperature".

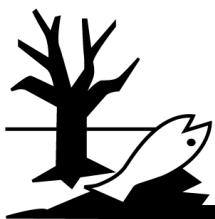
(Ref. doc.: INF.36 as amended)

### **Parts 1, 2, 3 and 4 and Annexes 3 to 9**

Informal document INF.10: proposal in paragraph 7 adopted without modifications.

### **Chapters 1.4 and 4.1 and Annexes 1, 2 and 3**

Replace the existing symbols in Chapter 1.4 (paragraph 1.4.10.3), Chapter 4.1 (decision logics 4.1.1 and 4.1.3), Annex 1 (tables for aquatic toxicity), Annex 2 (tables A2.28 (a) and (b)) and Annex 3 (tables for hazards to the aquatic environment) with the following symbol:



*(Ref. Doc: INF.31 as amended)*

### **Parts 3 and 4**

Document ST/SG/AC.10/C.4/2008/23, Annex 1: adopted with the following modifications:

Replace the amendment to note (a) to Table 3.1.1 with the following amendment:

Table 3.1.1 Replace note (a) with the following new notes (a) and (b) and re-designate current notes (b) to (f) as notes (c) to (g):

- “(a) The acute toxicity estimate (ATE) for the classification of a substance is derived using the LD<sub>50</sub>/LC<sub>50</sub> where available;
- (b) The acute toxicity estimate (ATE) for a substance in a mixture is derived using:
  - (i) the LD<sub>50</sub>/LC<sub>50</sub> where available. Otherwise,
  - (ii) the appropriate conversion value from Table 3.1.2 that relates to the results of a range test; or
  - (iii) the appropriate conversion value from Table 3.1.2 that relates to a classification category;”.

3.1.3.6.1 (c) In the second paragraph, replace "See note (a)" with "See note (b)".

4.1.3.4.6 In the amendment to sub-paragraph (d), replace "toxicity" with "hazards".

*(Ref. doc.: INF.39 as amended)*

### **Chapters 1.2, 3.2, 3.3 and Annex 2 (A2.18 and A2.19)**

Document ST/SG/AC.10/C.4/2008/22, proposal under "Issue 1.6" adopted as follows:  
Replace "structure-property relationship" with "structure-activity relationship"

#### **Chapter 3.1**

3.1.3.6.2.2 Replace "without any useable information at all" with "(without any useable information for classification)".

*(Ref. doc.: ST/SG/AC.10/C.4/2008/22 as amended)*

### Chapter 3.4

Add the following new paragraph:

"3.4.1.5 The hazard class "respiratory or skin sensitization" is differentiated into:

- Respiratory sensitization; and
- Skin sensitization".

(Ref. doc.: ST/SG/AC.10/C.4/2008/22)

### Chapter 3.4 and Annexes 1, 2 and 3

Document ST/SG/AC.10/C.4/2008/18 adopted as amended by -/C.4/2008/18/Add.1, Annex I, with the following additional modification:

3.4.2.1.1.3 In the second sentence, replace "are allocated" with "may be allocated" .

Document ST/SG/AC.10/C.4/2008/18/Add.1, Annex II: adopted without modifications.

### Chapter 4.1 and Annex 9

4.1.2.10.3 (a) At the end, after "degraded", add the following new text:

", unless the substance is identified as a complex, multi-component substance with structurally similar constituents. In this case, and where there is sufficient justification, the 10-day window condition may be waived and the pass level applied at 28 days as explained in Annex 9 (A9.4.2.2.3)".

A9.4.2.2.3 At the beginning, insert "(4.1.2.10.3)" after "The harmonized criteria". At the end, add the following new paragraph:

"Where there is sufficient justification, the 10-day window condition may be waived for complex, multi-component substances and the pass level applied at 28 days. The constituents of such substances may have different chain-lengths, degree and/or site of branching or stereo-isomers, even in their most purified commercial forms. Testing of each individual component may be costly and impractical. If a test on the complex, multi-component substance is performed and it is anticipated that a sequential biodegradation of the individual structures is taking place, then the 10-day window should not be applied to interpret the results of the test. A case by case evaluation should however take place on whether a biodegradability test on such a substance would give valuable information regarding its biodegradability as such (i.e. regarding the degradability of all the constituents) or whether instead an investigation of the degradability of carefully selected individual components of the complex, multi-component substance is required."

(Ref. doc.: INF.40/Rev.1)

### **Chapter 4.1 and Annex 10**

Document ST/SG/AC.10/C.4/2008/17 adopted without modifications.

### **Annex 3**

Document ST/SG/AC.10/C.4/2008/15 adopted with the following modification:

In the text of precautionary statement P502, replace “manufacturer” with “manufacturer/supplier”

### **Chapter 1.4 and Annex 3**

Document ST/SG/AC.10/C.4/2008/24, Annex: adopted with the following modifications:

A3.1.2.3 and A3.1.2.4 Amend to read as follows:

“A3.1.2.3 In addition to individual hazard statements, a number of combined hazard statements are given in Table A3.1.2. The alphanumerical codes for the combined statements are constructed from the codes for the individual statements that are combined, conjoined with the plus (“+”) sign. For example, H300 + H310 indicates that the text to appear on the label is “Fatal if swallowed or in contact with skin”.

A3.1.2.4 All assigned hazard statements should appear on the label unless otherwise specified in 1.4.10.5.3.3. The competent authority may specify the order in which they appear. Also, where a combined hazard statement is indicated for two or more hazard statements, the competent authority may specify whether the combined hazard statement or the corresponding individual statements should appear on the label, or may leave the choice to the manufacturer/supplier.”

Table A3.1.2 Delete the last entry (H335 + H336).

*(Ref. doc.: INF.6)*

**Part 2: Corrections to the second revised edition of the GHS adopted by the Sub-Committee at its sixteenth session**

**Chapters 1.4, 1.5, 3.2, 3.4, 3.8 and 3.10 and Annexes 5 and 9**

Corrections in informal document INF.8, Part 1: adopted.

**Chapter 1.4**

1.4.10.5.2 (a) In the third sentence, insert "mostly" before "used" twice.

*(Ref. doc.: INF.8, Part 2)*

**Chapter 1.5 and Annex 2**

Corrections in informal document INF.37: adopted.

**Chapter 3.1**

Table 3.1.1 Amend the column for Category 5 to read as follows:

Exposure route	Category 1	Category 2	Category 3	Category 4	Category 5
Oral <i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	5000
Dermal <i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	<i>See detailed criteria in Note (f)</i>
Gases <i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	<i>See detailed criteria in Note (f)</i>
Vapours <i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	
Dusts and mists <i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	<i>(unchanged)</i>	

*(Ref. doc.: INF.37, as amended)*

**Chapter 3.4**

Corrections to 3.4.1.4 and 3.4.5.2 in document ST/SG/AC.10/C.4/2008/18/Add.1, Annex 3: adopted without modifications.

**Annex 2**

A2.20 Replace the hazard statement "May cause allergic or asthma symptoms or breathing difficulties if inhaled" with "May cause allergy or asthma symptoms or breathing difficulties if inhaled".

A2.21 Replace the hazard statement "May cause allergic skin reaction" with "May cause an allergic skin reaction".

*(Ref. doc.: ST/SG/AC.10/C.4/2008/18/Add.1, Annex 3)*

## Annex II

### PROGRAMME OF WORK OF THE SUB-COMMITTEE FOR THE BIENNIUM 2009-2010

(a) Chemically unstable gases and gas mixtures

Pursue the work on the development of a proposal for the classification and labelling of chemically unstable gases and gas mixtures together with a test method to determine their chemical instability.

Focal point: Sub-Committee of Experts on the Transport of Dangerous Goods

Lead country: Germany

Terms of reference: see ST/SG/AC.10/C.4/24 (par. 49 and Annex 2, item 2(a)(i)) and INF.19

(b) Explosives and related matters

(i) Continue the review of Test Series 7;

Focal point: Sub-Committee of Experts on the Transport of Dangerous Goods

Lead country: United Kingdom

Terms of reference: see ST/SG/AC.10/C.4/26 par. 20

(ii) Pursue the work on a proposal for the classification of desensitized explosives (in cooperation with the Sub-Committee of Experts on the Transport of Dangerous Goods)

Lead country: Germany

Terms of reference: see ST/SG/AC.10/C.4/26 paras. 15-17

(c) Corrosion to metals

Consider pitting corrosion and suitability of Test C.1 for solids

Focal point: Sub-Committee of Experts on the Transport of Dangerous Goods

Lead country: France

Terms of reference: see INF.16

(d) Water activated toxicity

Pursue the work on test method N.5 for the assessment of water activated toxicity, in relation to:

- (i) the accurate and precise measurement of gas evolution rates for substances which in contact with water emit flammable or toxic gases;
- (ii) its possible application to substances which in contact with water emit corrosive gases;
- (iii) the improvement of the reproducibility of test results; and
- (iv) its suitability as a new method for the development of classification criteria, as appropriate.

Focal point: Sub-Committee of experts on the Transport of Dangerous Goods

Lead country: Germany



Terms of reference: see ST/SG/AC.10/C.4/2008/19, paragraph 6 and INF.18 paragraph 8.

- (e) Editorial revision of Chapters 3.2 and 3.3
- (i) Consider the detailed review documents prepared by the OECD expert groups during the development of Chapters 3.2 and 3.3;
  - (ii) Editorially revise Chapters 3.2 and 3.3 to improve clarity and user-friendliness of the criteria;
  - (iii) Examine whether particular criteria need further alignment/adjustment with respect to the internal consistency of Chapters 3.2 and 3.3 and develop proposals for any minor necessary amendments;

Lead country: Germany

Terms of reference: see INF.42 and ST/SG/AC.10/C.4/2008/22

- (f) Issues related to the application of GHS criteria to the classification of substances and mixtures

To clarify application of the GHS criteria through, for example, development of proposals for changes to the GHS document or development of examples illustrating application of criteria and any related hazard communication issues, as needed.

Lead country: United States of America

Terms of reference: see INF.39

- (g) Implementation issues

Lead country: Australia

Terms of reference: see ST/SG/AC.10/C.4/28, annex 2 and paragraph 72 of this report.

- (h) Improvement of Annexes 1, 2 and 3 of the GHS

Pursue work to further improve Annexes 1, 2 and 3 of the GHS, following the work streams hereafter, with the first given priority:

Work stream 1: to develop proposals to rationalize and improve the usability of hazard and precautionary statements, including proposals to eliminate redundancies among these statements;

Work stream 2: to improve the presentation of Annexes 1 to 3 of the GHS, taking into account the intended audiences, uses and purposes of the GHS.

Lead country: United Kingdom

Terms of reference: see ST/SG/AC.10/C.4/2008/24, par. 25, as amended

- (i) Labelling of small packagings (including work on packagings terminology/definitions)
  - (i) Development of guidance on the application of the general principles for the labelling of small packagings;
  - (ii) Review of the current terminology/definitions of means of containment and study of the needs of the different sectors and the cost-benefit impact of any proposed change.

Lead organisation: CEFIC

Terms of reference: see ST/SG/AC.10/C.4/2008/26, paragraph 5, as amended by INF.41

- (j) Continue the activities to facilitate the coordinated implementation of the GHS in countries;
- (k) Continue the cooperation with the Open-Ended Working Group of the Basel Convention for matters of common concerns;
- (l) Strengthen and increase cooperation with United Nations programmes, specialized agencies, regional, governmental and intergovernmental organizations as well as non-governmental organizations responsible for the administration of international agreements and conventions dealing with the management of chemicals so as to give effect to the GHS through such instruments;
- (m) Review reports on training and capacity-building activities;
- (n) Provide assistance to United Nations programmes and specialized agencies involved in training and capacity-building activities, such as UNITAR, ILO, FAO and WHO/IPCS through the development of guidance materials, advice with respect to their training programmes and identification of available expertise and resources.

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