




---

**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 Transport of Dangerous Goods**

**Report of the Sub-Committee of Experts on the Transport of  
Dangerous Goods on its forty-second session**

held in Geneva from 3 to 11 December 2012

**Contents**

	<i>Paragraphs</i>	<i>Page</i>
I. Attendance .....	1–6	5
II. Adoption of the agenda (agenda item 1) .....	7	5
III. Recommendations made by the Sub-Committee at its thirty-ninth fortieth and forty-first sessions (agenda item 2).....	8–50	6
A. Explosives and related matters .....	9–14	6
1. Packing Instructions P116, P131 and P137 .....	9–10	6
2. Similarity of results of the HSL flash composition test and the US flash composition test.....	11–14	6
B. Listing, classification and packing.....	15–29	7
1. Confetti-shooters .....	15	7
2. Adoption of expert judgement and weight of evidence procedures into the Model Regulations on the Transport of Dangerous Goods .....	16–18	7
3. Special provision 172.....	19	7
4. UN No. 2463, aluminium hydride.....	20	7
5. Fire extinguishers: assignment to UN No. 1044 and packaging.....	21	7
6. Neutron radiation detectors .....	22	8
7. Classification of polymerizing substances .....	23	8
8. Transport of packaging waste with residues of dangerous goods.....	24	8
9. Assignment of E codes for transport in excepted quantities.....	25–26	8
10. Assignment of packing groups to articles.....	27	9

11. Fuels in machinery and equipment.....	28	9
12. Adsorbed gas classification and packing.....	29	9
C. Electric storage system .....	30–41	9
1. Asymmetric capacitors .....	30–32	9
2. Corrections to the note in 2.9.4 (a).....	33	9
3. Alternative testing requirements for lithium battery assemblies designed for use in vehicles.....	34–37	10
4. Amended T6 test: transitional period for lithium batteries.....	38	10
5. Damaged or defective lithium batteries.....	39–40	11
6. Transport of waste lithium batteries .....	41	11
D. Miscellaneous proposals for amendments to the Model Regulations .....	42–50	11
1. Alternatives to the hot water bath test for UN Nos. 2037 and 3478 (section 6.2.4) .....	42	11
2. Small quantities of environmentally hazardous substances.....	43–44	11
3. Used medical devices or materials .....	45	12
4. Marking/Labelling.....	46–48	12
5. Marking of the date of manufacture of packagings of types 1H and 3H	49	12
6. Lamps containing small quantities of dangerous goods.....	50	12
IV. Electronic data interchange for documentation purposes (agenda item 3).....	51	12
V. Cooperation with the International Atomic (agenda item 4).....	52–60	12
1. Harmonization with the IAEA regulations for the Safe Transport of Radioactive Material .....	52–53	12
2. Uranium hexafluoride samples.....	54–55	13
3. Uranium hexafluoride – subsidiary hazards .....	56–58	13
4. Editorial changes.....	59	13
5. Miscellaneous.....	60	14
VI. Global harmonization of transport of dangerous goods regulations with the Model Regulations (agenda item 5) .....	61–65	14
A. Descriptions of labels, placards, symbols, markings and marks: Transitional measures .....	61	14
B. Dimensions of the marking of the UN number on packagings.....	62–63	14
C. Use in land and sea transport of packages containing dangerous goods in limited quantities marked and labelled in accordance with the ICAO Technical Instructions .....	64–65	14
VII. Guiding principles for the Model Regulations (agenda item 6).....	66–68	15
Classification of substances mentioned by name in the dangerous goods list, interpretation of the Model Regulations.....	66–68	15
VIII. New proposals for amendments to the Model Regulations on the Transport of Dangerous Goods (agenda item 7) .....	69–72	15

A.	Scope of section 5.5.3 .....	69–70	15
B.	Corrections to Packing Instructions P114 (a) .....	71	16
C.	Corrections to P501, P502, P504 and P802 .....	72	16
IX.	Issues relating to the globally Harmonized System of Classification and Labelling of Chemicals (agenda item 8).....	73–80	16
A.	Corrosivity criteria.....	73–74	16
1.	Hazard communication in the supply/use sector for substances and mixtures “corrosive to metals” .....	73	16
2.	Joint TDG/GHS Working Group on corrosivity criteria .....	74	16
B.	Criteria for water-reactivity .....	75	16
C.	Tests and criteria for oxidizing solids .....	76–77	17
D.	Known experience .....	78	17
E.	Miscellaneous .....	79–80	17
1.	Amendments to physical hazard precautionary statements .....	79	17
2.	Consequential amendments to chapter 2.9 of the Model Regulations resulting from the corrections proposed in ST/SG/AC.10/C.3/2012/24 ...	80	17
X.	Programme of work for the biennium 2013-2014 (agenda item 9) .....	81–86	17
A.	Specific proposals .....	81–85	17
1.	Articles containing small quantities of dangerous goods .....	81	17
2.	Applicability of the Model Regulations to the Transport of dangerous goods in road tank-vehicles.....	82	17
3.	Global recognition of UN and non-UN pressure receptacles .....	83	18
4.	Classification criteria and flammability categories for certain refrigerants .....	84	18
5.	Transport of ethylene oxide and propylene oxide mixtures .....	85	18
B.	Consolidated programme of work for 2013-2014.....	86	18
XI.	Draft resolution 2013/... of the Economic and Social Council (agenda item 10)...	87	19
XII.	Election of officers for the biennium 2013-2014 (agenda item 11) .....	88	19
XIII.	Other business (agenda item 12) .....	89–90	19
A.	Tributes .....	89	19
B.	Road Map on how to set up the administrative structures required for implementation of ADR .....	90	20
XIV.	Adoption of the report (agenda item 13) .....	91	20

Annex

I. Draft amendments to the Recommendations on the Transport of Dangerous Goods, Model Regulations and Manual of Tests and Criteria..... 21

## I. Attendance

1. The Sub-Committee of Experts on the Transport of Dangerous Goods held its forty-second session from 3 to 11 December with Mr. J. Hart (United Kingdom) as Chairperson and Mr. C. Pfauvadel (France) as Vice-Chairperson.
2. Experts from the following countries took part in the session: Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Germany, Finland, France, Italy, Japan, Kenya, Netherlands, Norway, Republic of Korea, South Africa, Spain, Sweden, Switzerland, United Kingdom 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: Chile, Democratic Republic of Congo and Zambia.
4. Representatives of the European Union and the Intergovernmental Organization for International Carriage by Rail (OTIF) also attended.
5. Representatives of the International Atomic Energy Agency (IAEA), the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO) were also present.
6. Representatives of the following non-governmental organizations took part in the discussion on items of concern to those organizations: American Biological Safety Association (ABSA); Association of Hazmat Shippers (AHS); Australian Explosives Industry Safety Group (AEISG); Compressed Gas Association (CGA); Council on Safe Transportation of Hazardous Articles (COSTHA); Dangerous Goods Advisory Council (DGAC); European Cosmetic, Toiletry and Perfumery Association (COLIPA); European Industrial Gases Association (EIGA); Dangerous Goods Trainers Association (DGTA); European Battery Recycling Association (EBRA); European Cylinder Makers Association (ECMA); European Metal Packaging (EMPAC); Federation of European Aerosol Associations (FEA); Fertilizer Europe (FE); Global Express Association (GEA); Global Lighting Forum (GLF); International Air Transport Association (IATA); International Association for Soaps, Detergents and Maintenance Products (AISE); International Association for the Promotion and Management of Portable Rechargeable Batteries (RECHARGE); International Confederation of Drums Manufacturers (ICDM); International Confederation of Intermediate Bulk Container Associations (ICIBCA); International Confederation of Plastics Packaging Manufacturers (ICPP); International Confederation of Container Reconditioners (ICCR); International Paint and Printing Ink Council (IPPIC); International Council of Chemical Associations (ICCA); International Dangerous Goods and Containers Association (IDGCA); International Federation of Airline Pilots' Associations (IFALPA); International Fibre Drum Institute (IFDI); KiloFarad International (KFI); Portable Rechargeable Battery Association (PRBA); Responsible Packaging Management Association of Southern Africa (RPMASA); Sporting Arms and Ammunition Manufacturers' Institute (SAAMI); and the World Nuclear Transport Institute (WNTI).

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

<i>Documents:</i>	ST/SG/AC.10/C.3/83 (Provisional agenda) ST/SG/AC.10/C.3/83/Add.1 (List of documents)
<i>Informal documents:</i>	INF.1, INF.2 (List of documents) INF.15 (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.70).

### **III. Recommendations made by the Sub-Committee at its thirty-ninth, fortieth and forty-first sessions (agenda item 2)**

*Document:* ST/SG/AC.10/C.3/2012/68 (secretariat)

8. The Sub-Committee confirmed the decisions taken at the previous sessions on the basis of the consolidated text prepared by the secretariat, subject to a number of modifications and to the new decisions taken in respect of the various agenda items of the current session which had consequences for the list of amendments (see annex).

#### **A. Explosives and related matters**

##### **1. Packing instructions P116, P131 and P137**

*Document:* ST/SG/AC.10/C.3/2012/67 (Canada)

*Informal document:* INF.13 (IME)

9. The proposed amendments to packing instructions P116, P131 and P137 were adopted (see annex).

10. The Sub-Committee also decided that the packing instructions for explosives should be updated and that this task should be added as an item in the programme of work for the forthcoming biennium.

##### **2. Similarity of results of the HSL flash composition test and the US flash composition test**

*Document:* ST/SG/AC.10/C.3/2012/78 (Netherlands)

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

11. A number of experts shared the opinion of the expert from the Netherlands that it would be premature to cite the US flash composition test in the Manual of Tests and Criteria as an alternative to the HSL flash composition test because the results presented from a comparative analysis of these two tests did not match all of the time. They therefore felt that it would be better to undertake further work in this area during the forthcoming biennium.

12. Other experts were not opposed to the introduction of that test as an alternative, but felt that, in view of the fact that some of the results of the two tests did not match, it would be best to establish which of the tests should be the standard.

13. Others recalled that the Sub-Committee, on the advice of the Working Group on Explosives, had agreed to cite the US flash composition test in the Manual at its last session, and they did not feel that it would be wise, as a matter of principle, to revisit that decision.

14. The proposal of the expert from the Netherlands to defer the final decision on the matter until the next biennium was put to a vote and adopted. This item will therefore be included in the next programme of work.

## **B. Listing, classification and packing**

### **1. Confetti-shooters**

*Document:* ST/SG/AC.10/C.3/2012/66 (Germany)

15. The Sub-Committee adopted the proposal presented as the option without the exemption for packagings of not more than 30 kg, with some changes suggested by the expert from Germany (see annex).

### **2. Adoption of expert judgement and weight of evidence procedures into the Model Regulations on the Transport of Dangerous Goods**

*Document:* ST/SG/AC.10/C.3/2012/74 (CEFIC)

16. Some experts supported the idea of incorporating in the Model Regulations certain paragraphs from subsections 1.3.2.4.7 and 1.3.2.4.8 of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), which explained the use of semi-quantitative and qualitative criteria and concepts such as “expert judgement” and “weight of evidence”.

17. Others were opposed, as they considered that the paragraphs in question were not written as regulatory provisions and could lead to problems of interpretation. They preferred introducing them in the Guiding Principles, or simply making reference to them there. Some experts also considered that the issue should be examined in more detail to see how to adapt them to the transport regulations before including them in the Guiding Principles.

18. The representative of CEFIC withdrew her proposal and said that it would be useful to take it up on the basis of the experience gained in the work currently under way on corrosivity.

### **3. Special provision 172**

*Informal document:* INF.50 (IATA)

19. The editorial improvements proposed by IATA were adopted (see annex).

### **4. UN No. 2463, aluminium hydride**

*Document:* ST/SG/AC.10/C.3/2012/79 (COSTHA)

20. After lengthy discussions on various questions of principle, including the possibility, on the basis of tests, of exempting or classifying certain forms of substances already classified under packing group I in other packing groups, the fact that test result representativeness depended on the quantity or form of the substance tested and the question of whether alpha-aluminium hydride should be exempted or whether the question should be considered in more general terms, the representative of COSTHA withdrew the proposal. He would bring it up again at the next session.

### **5. Fire extinguishers: assignment to UN No. 1044 and packaging**

*Document:* ST/SG/AC.10/C.3/2012/62 (Germany)

*Informal document:* INF.52 (Germany)

21. The Sub-Committee adopted proposal 1 contained in informal document INF.52. The expert of Germany withdrew her second proposal to amend special provision 225, given that, in the light of 2.2.2.3, fire extinguishers charged with a compressed gas with a

pressure less than 200 kPa at 20 °C possessing no other dangerous properties and which did not contain any other dangerous goods were not subject to the Model Regulations.

#### **6. Neutron radiation detectors**

*Document:* ST/SG/AC.10/C.3/2012/60 (DGAC)

*Informal documents:* INF.49 and 54 (DGAC)  
INF.55 (IAEA)

22. The Sub-Committee adopted the provisions relating to the transport of neutron radiation detectors containing boron trifluoride based on informal document INF.54, with some amendments (see annex).

#### **7. Classification of polymerizing substances**

*Document:* ST/SG/AC.10/C.3/2012/82 (DGAC)

23. The Sub-Committee was in favour of dealing with the issue of substances that self-reacted by polymerization during transport and did not fall under Classes 1 to 8. However, it did not wish to decide on the specific proposals of DGAC, as it considered that the matter should be addressed as a whole and in greater detail during the next biennial period. Furthermore, as the matter could affect areas other than transport, particularly storage, the Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals should be informed about it. The GHS Sub-Committee should be requested to help by including the issue of classification of such substances and hazard communication in its programme of work.

#### **8. Transport of packaging waste with residues of dangerous goods**

*Document:* ST/SG/AC.10/C.3/2012/85 (France)

*Informal documents:* INF.18 (CEFIC)  
INF.41 (ICCR-ICPP)  
INF.51/Rev.1 (France)

24. The compromise proposal contained in informal document INF.51/Rev.1 was adopted (see annex). Clarification was provided that empty packagings transported for reconditioning, repair, routine maintenance, remanufacturing or reuse should remain subject to the provisions of 5.1.3.1.

#### **9. Assignment of E codes for transport in excepted quantities**

*Document:* ST/SG/AC.10/C.3/2012/88 (ICAO)

*Informal document:* INF.48 (ICAO)

25. The proposal to amend the assignment of E codes to ensure multimodal harmonization with the ICAO Technical Instructions was adopted, with some changes as proposed by the representative of ICAO.

26. Several experts suggested that ICAO be requested to help identify criteria for the assignment of excepted quantity codes such that a general rule for assignment provided for in the Guiding Principles could be adopted. Accordingly, the Sub-Committee asked ICAO to submit a proposal at the next session for inclusion in the Guiding Principles of the criteria on which these exceptions are based. This would make it possible to bring the Guiding Principles into line with the UNECE website with regard to the effective assignment of these codes on publication of the eighteenth revised edition of the Recommendations.



**10. Assignment of packing groups to articles**

*Document:* ST/SG/AC.10/C.3/2012/61 (IATA)

*Informal document:* INF.57 (IATA)

27. The proposal contained in informal document INF.57 was adopted with some corrections (see annex). It was pointed out that chemical kits and first aid kits are not considered to be articles. No amendment was proposed for UN No. 3165, aircraft hydraulic unit fuel tank, as IATA intends to propose that that entry should be deleted from the dangerous goods list if it is established that such tanks are no longer in use.

**11. Fuels in machinery and equipment**

*Document:* ST/SG/AC.10/C.3/2012/81 (DGAC)

*Informal document:* INF.39 (DGAC)

28. After long discussions, the Sub-Committee decided that consideration of the issues raised by DGAC should be deferred to the next biennium.

**12. Adsorbed gas classification and packing**

*Document:* ST/SG/AC.10/C.3/2012/91 (COSTHA)

*Informal documents:* INF.35 (CGA)  
INF.66 (COSTHA)  
INF.69 (COSTHA)

29. The Sub-Committee adopted the proposal as laid down in INF.69 with some modifications (see annex). The secretariat was invited to request ISO to provide a copy of the standards referred to therein and to circulate them to the experts of the Sub-Committee.

**C. Electric storage systems****1. Asymmetric capacitors**

*Document:* ST/SG/AC.10/C.3/2012/84 (Japan)

*Informal document:* INF.10 (Japan)

30. Some experts opposed providing a derogation for capacitors with a maximum storage capacity of 20 Wh containing electrolytes classified as dangerous goods and transported in a charged state as they felt the electrical hazard was not properly addressed. They moved to delete the proposed text, but their motion was not carried.

31. It was noted that some nickel-carbon capacitors containing corrosive electrolytes were currently transported under UN No. 2795. The Sub-Committee confirmed that this was appropriate.

32. The entire proposal, including the changes to the name of UN No. 3499, was put to the vote and adopted.

**2. Corrections to the note in 2.9.4 (a)**

*Informal document:* INF.38 (Secretariat)

33. The Sub-Committee adopted the corrections proposed by the secretariat (see annex).

### 3. Alternative testing requirements for lithium battery assemblies designed for use in vehicles

*Document:* ST/SG/AC.10/C.3/2012/94 (PRBA-COSTHA)

*Informal document:* INF.62 (PRBA-COSTHA)

34. The Sub-Committee noted that the World Forum for Harmonization of Vehicle Regulations (WP.29) had developed its own testing regime for lithium batteries intended to be installed in electric vehicles, contained in UNECE Regulation No. 100 “Battery electric vehicles with regard to specific requirements for construction and functional safety”. This test regime is intended to ensure safety when batteries are installed, but not necessarily when they are transported. As a result, different test procedures may be justified in some cases.

35. The Sub-Committee agreed in principle to compare the two test regimes and to consider whether some of the tests of Regulation No. 100 could be used instead of those of the Manual of Tests and Criteria provided that this would not result in a lower safety level. It could also propose to WP.29 to review some of the tests in Regulation No. 100 in order to take account of transport of dangerous goods requirements.

36. The Sub-Committee accepted the offer of PRBA-COSTHA to organize a session of an informal working group to address these issues. The terms of reference of the informal working group are as follows:

- (a) To review and contrast relevant testing requirements applicable to large lithium batteries in particular those used in the automotive, aviation and other major sectors of the industry;
- (b) To consider the practicability of the test provisions for battery assemblies in 38.3.3 (f) of the Manual of Tests and Criteria and consider the need to review the existing definitions of large batteries;
- (c) To identify means of harmonizing existing testing requirements or recognizing test equivalents;
- (d) To develop proposals for regulatory text for inclusion in section 38.3 of the Manual if needed.

37. The secretariat was invited to convey the information to the WP.29 secretariat and invite WP.29 experts to consult their expert of the Sub-Committee in case they would be interested in participating in this work, bearing in mind however that the test requirements of the Manual are not intended only for vehicle batteries but to all kinds of large batteries.

### 4. Amended T6 test: transitional period for lithium batteries

*Document:* ST/SG/AC.10/C.3/2012/65 (Germany)

*Informal documents:* INF.53 and INF.56 (Germany)  
INF.59 and INF.59/Rev.1 (France)  
INF.65 (IATA)

38. After long discussions, the Sub-Committee adopted a text for transitional measures in 2.9.4 for the transport of lithium batteries meeting the requirements of previous versions of the Manual of Tests and Criteria on the basis of INF.59/Rev.1 with some modifications. According to these measures, lithium batteries manufactured before 1 July 2003 to a type meeting the requirements of revision 3 could continue to be transported. Those manufactured to a type meeting the requirements of any subsequent version or amendment could continue to be manufactured to that type and transported (see annex).

## 5. Damaged or defective lithium batteries

*Document:* ST/SG/AC.10/C.3/2012/95 (PRBA-RECHARGE)

*Informal documents:* INF.29 (PRBA-RECHARGE)  
INF.45 (France)  
INF.63 (PRBA-RECHARGE)

39. The documents submitted by PRBA, RECHARGE and France were discussed by a lunchtime working group which proposed new provisions for the transport of damaged or defective lithium cells and batteries in informal document INF.63. The expert from China proposed an amendment to these provisions, whereby the identification of defective batteries would be, for safety reasons, subject to competent authority approval. This amendment was put to the vote but was not adopted. The Sub-Committee adopted the new provisions proposed by the group with some corrections (see annex).

40. Some issues would have to be further discussed in the next biennium, such as:

- Transport safety of batteries, where competent authority approval is prescribed in the adopted provisions, including measures applicable prior to transport in order to eliminate the risk of dangerous reactions;
- Transport of equipment containing several batteries in large packagings.

## 6. Transport of waste lithium batteries

*Document:* ST/SG/AC.10/C.3/2012/86 (PRBA\_RECHARGE)

*Informal documents:* INF.24 (PRBA-RECHARGE)  
INF.64, INF.64/Rev.1 (PRBA-RECHARGE)  
INF.67 (United States of America)

41. The Sub-Committee adopted new provisions for the transport of waste lithium batteries on the basis of informal document INF.64/Rev.1 with some modifications (see annex).

## D. Miscellaneous proposals for amendments to the Model Regulations

### 1. Alternatives to the hot water bath test for UN Nos. 2037 and 3478 (section 6.2.4)

*Document:* ST/SG/AC.10/C.3/2012/69 (ECMA)

42. The proposed amendment to section 6.2.4 was adopted (see annex).

### 2. Small quantities of environmentally hazardous substances

*Document:* ST/SG/AC.10/C.3/2012/93 (United States of America)

43. The proposal to exempt environmentally hazardous substances classified under UN Nos. 3077 and 3082 from the provisions of the Model Regulations when meeting the relevant provisions of Part 4 and when transported in quantities of 5 litres or 5 kilograms or less per packaging was adopted (see annex).

44. The expert from the United States said that some participants in the correspondence working group had indicated that they wished to continue work in the next biennium on the provisions for the transport of environmentally hazardous substances. The Sub-Committee therefore decided to include it in its programme of work.

**3. Used medical devices or materials**

*Document:* ST/SG/AC.10/C.3/2012/92 (COSTHA)

*Informal document:* INF.60 (COSTHA)

45. Because of the diverse and complex nature of the issues raised when the proposals were discussed, the Sub-Committee decided to include the questions more generally in the programme of work for the next biennium.

**4. Marking/labelling**

*Document:* ST/SG/AC.10/C.3/2012/96 (Secretariat)

*Informal document:* INF.55 (IAEA)

46. The Sub-Committee adopted the amendments to 5.2.2.2.1.1 proposed by the secretariat and IAEA (see annex).

47. As there were a number of comments regarding the inconsistency in the use of the terms “marks” and “markings”, the expert from the United Kingdom agreed to consider the issue with a view to presenting a paper during the next biennium.

48. IAEA would consider the possibility of harmonizing the dimensions of the placards for Class 7 during its next round of work and would present the outcome in due course.

**5. Marking of the date of manufacture of packagings of types 1H and 3H**

*Informal document:* INF.5 (ICPP)

49. The Sub-Committee adopted the proposal to specify in a new note in 6.1.3.1 (e) that methods of marking other than the one given in the example were authorized (see annex). Additionally, it was decided that 6.5.2.2.4 should be amended in the same way as 6.1.3.1 (e).

**6. Lamps containing small quantities of dangerous goods**

*Document:* ST/SG/AC.10/C.3/2012/76 (GLF)

*Informal documents:* INF.3, INF.61, INF.61/Rev.1 (GLF)  
INF.55 (IAEA)

50. The proposal of amendment to section 1.1.1 for exempting certain lamps, as laid down in INF.61/Rev.1 was adopted with a few editorial modifications (see annex).

**IV. Electronic data interchange for documentation purposes  
(agenda item 3)**

51. No document was presented under the agenda item, but it was decided that the question would remain in the programme of work for the next biennium.

**V. Cooperation with the International Atomic Energy Agency  
(agenda item 4)**

**1. Harmonization with the IAEA Regulations for the Safe Transport of Radioactive Material**

*Document:* ST/SG/AC.10/C.3/2012/100 (Secretariat and IAEA)

*Informal documents:* INF.4, INF.4/Rev.1, INF.17, INF.70 (Secretariat and IAEA)

52. The Sub-Committee noted with satisfaction that in accordance with the decisions taken at the last session (ST/SG/AC.10/C.3/82, paras. 125–131), the secretariat had cooperated with the IAEA secretariat to submit to the IAEA Transport Safety Standards Committee (TRANSSC) the outcome of the harmonization work so that the comments could be verified. Informal documents INF.17 and INF.4/Rev.1 contained the lists of amendments incorporating the remarks made by TRANSSC at its twenty-fourth and twenty-fifth sessions in July and November 2012.

53. The Sub-Committee adopted the list of amendments which appeared in informal document INF.17, with some editorial corrections (see annex).

## 2. Uranium hexafluoride samples

*Document:* ST/SG/AC.10/C.3/2012/101 (Secretariat)

54. The Sub-Committee noted that the secretariat had first prepared a proposal for TRANSSC at that body's July 2012 session, as requested by the Sub-Committee (ST/SG/AC.10/C.3/82, paras. 135 and 136). As TRANSSC had decided in the end to propose to classify such samples in Class 8, the secretariat had prepared a new proposal (ST/SG/AC.10/C.3/2012/101), accepted in principle by TRANSSC at its November 2012 session, with some editorial changes.

55. The Sub-Committee too adopted that proposal, with some other amendments (see annex).

## 3. Uranium hexafluoride – subsidiary hazards

*Informal documents:* INF.7 (Secretariat)  
INF.55 (IAEA)

56. The Sub-Committee took note of the information provided by the secretariat (INF.7) explaining why subsidiary hazards other than that of Class 8 had not been assigned to uranium hexafluoride when UN Nos. 2977 and 2978 had been introduced.

57. TRANSSC had also been informed, and had agreed to consider the issue during the next revision cycle to take into account the fact that the principles for identifying subsidiary hazards had changed, and that they should now be identified.

58. The Sub-Committee agreed to include that issue too in its programme of work, recalling that the matter had already been referred to the GHS Sub-Committee and that IAEA had already provided data showing a toxicity hazard.

## 4. Editorial changes

*Informal document:* INF.43 (Secretariat)

59. The secretariat noted that the references to Class 7 in the Model Regulations were not always appropriate, as some provisions also concerned radioactive material in excepted packages possessing other hazards, and which therefore did not come under Class 7. The proposed amendments to replace the term "Class 7" with "radioactive material" in certain paragraphs were adopted (see annex).

**5. Miscellaneous**

*Informal document:* INF.55 (IAEA)

60. The Sub-Committee noted with satisfaction that TRANSSC had reviewed the proposals under discussion at the current session and had transmitted comments to be taken into account during their consideration on a case-by-case basis.

**VI. Global harmonization of transport of dangerous goods regulations with the Model Regulations (agenda item 5)**

**A. Descriptions of labels, placards, symbols, markings and marks: transitional measures**

*Document:* ST/SG/AC.10/C.3/2012/80 (United Kingdom)

61. The 11 proposals of transitional measures were adopted (see annex).

**B. Dimensions of the marking of the UN number on packagings**

*Informal documents:* INF.27 (Secretariat)  
INF.33 (United Kingdom)

62. The Sub-Committee agreed that the reference to the capacity of the packaging in the second sentence of 5.2.1.1 was not appropriate, as a capacity could not be expressed in kilograms, and the term was undefined. It also noted the problem that arose when the packaging was oversized in relation to its capacity, for example in the case of packages for radioactive material. However, some experts were not in favour of the solution proposed by the United Kingdom, which referred to the external volume, as they believed that it could not always be measured in the event of a verification. Others considered that a height of 12 mm should be required, regardless of the dimensions of the packaging.

63. The Sub-Committee decided, in the absence of an ideal solution, to use the text taken from RID, ADR and ADN, which referred to capacity for liquids and to maximum net mass for solids (see annex).

**C. Use in land and sea transport of packages containing dangerous goods in limited quantities marked and labelled in accordance with the ICAO Technical Instructions**

*Informal documents:* INF.31 (SAAMI)  
INF.47 (ICAO)  
INF.68 (SAAMI and United Kingdom)

64. The Sub-Committee adopted the proposal to add a paragraph 3.4.10, clarifying the possibility to transport as limited quantities by land and sea those packages which bear the marking shown in 3.4.7 while also bearing additional marks and labels required by the ICAO Technical Instructions for a fully regulated package (see annex).

65. The Sub-Committee also welcomed the provision by ICAO of the illustrations in informal document INF.47, which demonstrated the various possible cases. It decided to include them in the Guiding Principles for the Model Regulations, with an explanatory text to be drawn up by the expert from the United Kingdom.

## VII. Guiding principles for the Model Regulations (agenda item 6)

### **Classification of substances mentioned by name in the dangerous goods list, interpretation of the Model Regulations**

*Informal document:* INF.20 (Netherlands)

66. The expert from the Netherlands drew attention to problems for classification of substances which are listed by name in the Dangerous Goods List. The provisions are clear in the case of solutions and mixtures, or when it can be shown by the application of tests and criteria that a substance listed by name does not meet the criteria, but it is unclear how to deal with substances possessing additional hazards not identified in the list.

67. Some experts felt that such substances should be classified under the appropriate generic or NOS entry reflecting all hazards identified, whilst others feared that such an approach could lead to misunderstandings or legal problems in international transport.

68. It was noted that the classification work currently carried out in many countries in the context of implementation of the GHS is likely to put into question the current classification of some substances listed by name. Therefore it was agreed that the issue raised by the Netherlands should be further discussed in the next biennium and that the GHS Sub-Committee should be informed accordingly.

## VIII. New proposals for amendments to the Model Regulations on the Transport of Dangerous Goods (agenda item 7)

### A. Scope of section 5.5.3

*Document:* ST/SG/AC.10/C.3/2012/59 (Switzerland)

*Informal documents:* INF.32 (GEA)  
INF.58 (Secretariat)

69. The Sub-Committee noted the view of the UNECE Working Party on the Transport of Dangerous Goods (WP.15) that section 5.5.3 should apply only when there is demonstrable confirmed risk of asphyxiation in the transport unit and that it should be for the parties concerned, notably the consignor, to assess this risk. Some experts supported this approach. However several experts were not convinced that the changes proposed by the expert from Switzerland would solve the problem raised and the expert from Switzerland will submit a new proposal at the next session.

70. Similarly several experts shared GEA's view that section 5.5.3 should not apply to road vehicles transporting packages containing dry ice as a coolant, notably because dry ice itself is not subject to ADR. However, others noted that it was not likely that dry ice would evaporate in the vehicle when carried as cargo, while this was likely to happen when used as a coolant. Furthermore the GEA proposal was intended to exempt also such packages when carried in freight containers as full load, and some experts felt that this issue could preferably be addressed at modal level. Since the GEA proposal was submitted late in an informal document, the Sub-Committee invited GEA to reconsider the issue in the light of the comments made.

## **B. Corrections to Packing Instructions P114 (a)**

*Document:* ST/SG/AC.10/C.3/2012/83 (Secretariat)

*Informal document:* INF.12 (IME)

71. The corrections proposed by the secretariat were adopted (see annex).

## **C. Corrections to P501, P502, P504 and P802**

*Informal document:* INF.30 (Germany)

72. The corrections proposed by the expert from Germany were adopted (see annex).

# **IX. Issues relating to the Globally Harmonized System of Classification and Labelling of Chemicals (agenda item 8)**

## **A. Corrosivity criteria**

### **1. Hazard communication in the supply/use sector for substances and mixtures “corrosive to metals”**

*Document:* ST/SG/AC.10/C.3/2012/98 (AISE)

73. The Sub-Committee noted with satisfaction the outcome of the work of the GHS correspondence group, in particular the fact that the options proposed would remain neutral for the transport sector, bearing in mind that the Sub-Committee is not in favour of a proliferation of new pictogrammes if not necessary. The Sub-Committee noted also that the range of substances that would be corrosive to metals and not corrosive to skin or eyes was rather limited. For the proposed options, there was no consensus but the majority of experts who took the floor expressed preference for option B.

### **2. Joint TDG/GHS Working Group on corrosivity criteria**

*Informal documents:* INF.6 (Secretariat)  
INF.36 (United Kingdom)  
INF.16 and INF.25 (CEFIC)  
INF.37 (Netherlands)

74. These documents were discussed by the Joint TDG-GHS Working Group on corrosivity criteria which met on 11 December 2012.

## **B. Criteria for water-reactivity**

*Informal document:* INF.40 (United States of America)

75. The Sub-Committee, looking forward to further developments, took note of the information provided on the status of the project managed by the United States Transportation Research Board.



## C. Tests and criteria for oxidizing solids

*Document:* ST/SG/AC.10/C.3/2012/75 (Germany)

76. The Sub-Committee agreed to include an additional test O.3 for classification of oxidizing solids in the Manual of Tests and Criteria, subject to concurrence by the GHS Sub-Committee (see annex). This test is equivalent and preferable to the O.1 test.

77. Technical problems for performing both tests had been identified and additional work was needed. Once these problems had been resolved, it was anticipated that the O.3 test could replace the O.1 test, possibly in four years. It was not expected that classifications would be amended on this basis in the interim period.

## D. Known experience

78. As no document had been submitted, this sub-item was not discussed.

## E. Miscellaneous

### 1. Amendments to physical hazard precautionary statements

*Document:* ST/SG/AC.10/C.3/2012/102 (United Kingdom)

*Informal documents:* INF.8 and INF.8/Add.1 (United Kingdom)

79. The Sub-Committee noted the information provided but did not express comments on this issue to be discussed by the GHS Sub-Committee.

### 2. Consequential amendments to chapter 2.9 of the Model Regulations resulting from the corrections proposed in ST/SG/AC.10/C.3/2012/24

80. The Sub-Committee instructed the secretariat to reflect the corrections that would be made by the GHS Sub-Committee to the GHS in Chapter 2.9 of the Model Regulations, as appropriate.

## X. Programme of work for the biennium 2013-2014

### A. Specific proposals

#### 1. Articles containing small quantities of dangerous goods

*Document:* ST/SG/AC.10/C.3/2012/77 (United Kingdom)

81. The Sub-Committee agreed to include this issue in the programme of work. The expert from the United Kingdom invited written comments.

#### 2. Applicability of the Model Regulations to the transport of dangerous goods in road tank-vehicles

*Document:* ST/SG/AC.10/C.3/2012/99 (Secretariat)

82. The Sub-Committee noted the information provided by the secretariat on accident statistics concerning the transport of liquid or gas petroleum products in tank-vehicles in developing countries. The Sub-Committee considered however that this was a modal issue

and that since the safety of road transport in tank-vehicles was addressed differently in various regions of the world, it would be difficult to elaborate recommendations that would be accepted for worldwide implementation. The Sub-Committee felt that developing countries could use rules and regulations internationally recognized as ensuring a high level of safety, as they deem appropriate.

### **3. Global recognition of UN and non-UN pressure receptacles**

*Informal document:* INF.14 (United Kingdom and United States of America)

83. The Sub-Committee supported adding this item to its work programme and agreed to establish a correspondence working group for this purpose in accordance with the terms of reference specified in INF.14, as follows:

- Consider the safety implications of differing national/regional/UN design specifications;
- Consider the safety implications of differing approval and testing regimes for such pressure receptacles;
- Consider requirements for filling and use to better understand the implications of enhanced recognition;
- Propose measures that might be applied through inclusion in the Model Regulations or other instruments to promote mutual recognition and free movement of pressure receptacles on a global basis.

### **4. Classification criteria and flammability categories for certain refrigerants**

*Informal document:* INF.26 (Belgium)

84. The Sub-Committee agreed to include this issue in its programme of work.

### **5. Transport of ethylene oxide and propylene oxide mixtures**

*Informal document:* INF.44 (United States of America)

85. The Sub-Committee agreed to include this issue in its programme of work provided that account would be taken of relevant ISO standards.

## **B. Consolidated programme of work for 2013-2014**

86. On the basis of the proposals in section A above and those discussed under other agenda items or at previous sessions, the Sub-Committee agreed to include the following items in its work programme for 2013-2014:

- (a) Explosives and related matters (including amendments to the list of dangerous goods; desensitized explosives; tests and criteria for flash compositions; review of test series 6; review of tests in parts I and II of the Manual of Tests and Criteria; review of packing instructions for explosives);
- (b) Listing, classification and packing (including amendments to the list of dangerous goods; classification of polymerizing substances; classification of substances listed by name in the dangerous goods list which do not meet the classification criteria or which meet criteria for hazards not identified in the list);

- (c) Electric storage systems (including testing of lithium batteries, safety procedures for damaged/defective lithium batteries not covered by current regulatory text; transport of large batteries; thermal batteries);
- (d) Transport of gases (including transport of ethylene oxide and propylene oxide mixtures; global recognition of UN and non-UN pressure receptacles; composite cylinders);
- (d) Miscellaneous proposals of amendments to the UN Model Regulations (including fuels in machinery or equipment; articles containing small quantities of dangerous goods; used medical devices; transport of environmentally hazardous substances; terminology issues; marking and labelling issues; packaging issues; tank issues; scope of section 5.5.3);
- (e) Electronic data interchange;
- (f) Cooperation with IAEA (including transport of radioactive material possessing additional hazards);
- (g) Global harmonization of transport of dangerous goods regulations with the UN Model Regulations;
- (h) Guiding principles for the Model Regulations (updating, including rationale for assignment of E codes);
- (i) Issues relating to the GHS (including corrosivity criteria; criteria for water-reactivity; classification criteria and flammability categories for certain refrigerants; classification and testing of oxidizing solids; expert judgement/weight of evidence).

## **XI. Draft resolution 2013/... of the Economic and Social Council (agenda item 10)**

*Informal document:*

INF.22 (Secretariat)

87. The Sub-Committee adopted the part of the resolution dealing with its work during the biennium 2011-2012 on the basis of a draft prepared by the secretariat.

## **XII. Election of officers for the biennium 2013-2014 (agenda item 11)**

88. On a proposal by the expert from the United States of America supported by the expert from Belgium, the Sub-Committee re-elected Mr. J. Hart (United Kingdom) and Mr. C. Pfauvadel (France) as Chair and Vice-Chair respectively, by acclamation.

## **XIII. Other business (agenda item 12)**

### **A. Tributes**

89. The Sub-Committee, informed that Mr. B. Hancyk (Poland), Mr. P. Jobber (United Kingdom), Mr. F. Jonckheere (CEFIC/ICCA), Mr. Z. Lewycky (Canada) would be either retiring or moving to other positions soon, paid tribute to their contribution to the work of the Sub-Committee and wished them all success in their new endeavours.

**B. Road Map on how to set up the administrative structures required for implementation of ADR**

*Informal document:*

INF.46 (Secretariat)

90. The Sub-Committee noted that the UNECE Working Party on the Transport of Dangerous Goods had developed guidelines for countries that would be interested in acceding to the European Agreement concerning the international carriage of dangerous goods by road (ADR) or implementing its provisions for regulating domestic traffic of dangerous goods by road.

**XIV. Adoption of the report (agenda item 13)**

91. The Sub-Committee adopted the report on its forty-second session and its annexes on the basis of a draft prepared by the secretariat.

## Annex

### **Draft amendments to the Recommendations on the Transport of Dangerous Goods, Model Regulations and Manual of Tests and Criteria**

The draft amendments adopted during the session were listed in documents ST/SG/AC.10/C.3/2012/CRP.4 and addenda 1-5.

They were adopted with some minor corrections and transmitted to the Committee, which endorsed them, as corrected, at its sixth session (14 December 2012). The adopted texts may be found as annexes I and II to the Committee's report as follows:

- Amendments to the Recommendations on the Transport of Dangerous Goods, Model Regulations: ST/SG/AC.10/40/Add.1;
  - Amendments to the Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria: ST/SG/AC.10/40/Add.2.
-