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REPORT OF THE GROUP OF RAPPORTEURS ON ITS SEVENTEENTH SESSION

(4-15 August 1975)

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REPORT

1. The Group of Rapporteurs of the Committee of Experts on the Transport of Dangerous Goods held its seventeenth session from 4 to 15 August 1975. The session was attended by Rapporteurs and observers from the following countries: Canada; France; Germany, Federal Republic of; Italy; Union of Soviet Socialist Republics; United Kingdom; United States of America; and from the Inter-Governmental Maritime Consultative Organization (IMCO), the Central Office for International Railway Transport (OCTI), the International Chamber of Commerce (ICC); the International Road Transport Union (IRU), the International Chamber of Shipping (ICS), the International Air Transport Association (IATA) and the European Council of Chemical Manufacturers' Federations (CEFIC).

2. Experts from Chile and the Netherlands were invited by the Group to participate in the discussion of certain agenda items.

3. The International Petroleum Industry Environmental Conservation Association (IPIECA) and the Syndicat européen des fûts en acier (European Steel Drum Association) (SEFA) took part in the work on certain agenda items, as did also an organization which had requested to do so, the Permanent International Committee on Acetylene, Oxy-Acetylene, Welding and Allied Industries (CPI) (see E/CN.2/CONF.5/R.449).

ADOPTION OF THE AGENDA

4. The Group adopted the provisional agenda prepared by the Secretariat (E/CN.2/CONF.5/R.446) and arranged a time-table for the consideration of certain items (E/CN.2/CONF.5/R.447/Add.2), on the understanding that the question of organic peroxides would be considered again on Monday, 11 August 1975.

ELECTION OF OFFICERS

5. On the proposal of the Rapporteur from the United States of America, supported by the Rapporteurs from France and the Union of Soviet Socialist Republics, Mr. L. SAVI (Italy) was elected Chairman. On the proposal of the Rapporteur from Italy, supported by the Rapporteur from the Union of Soviet Socialist Republics, Mr. H. KEMLER (France) and Mr. L. SPENCER (United Kingdom) were elected Vice-Chairmen.

6. The Group agreed to invite Mr. Spencer to preside over the discussion of agenda items for which the Chairman would be unable to take the Chair and Mr. Kemler to preside over the discussion on tank-containers (agenda item 7).

DEFINITIONS OF CLASSES AND DIVISIONS

Definitions of classes for the purpose of protection of the environment

7. The Rapporteur from Canada explained why he had submitted the proposals contained in document E/CN.2/CONF.5/R.460. They were prompted mainly by the desire to avoid the adoption of divergent approaches by different organizations to the environmental problems occurring in transport, when the Committee of Experts had already acquired considerable experience in dealing with the classification, packaging and labelling of the substances listed in the Recommendations, most of which were harmful to the environment.

8. In his view, the Group of Rapporteurs should make an immediate study of this problem, since the Committee had sought recognition of its role in pollution prevention, and he proposed for that purpose a series of criteria and a possible label for a class of substances presenting an environmental hazard.

9. All speakers acknowledged the importance of the problem and the value of the proposals of the Rapporteur from Canada. An exchange of views on how it should be approached revealed, at both the national and international level, aspects requiring clarification.

10. The Group noted the seriousness of the problem and thanked the Rapporteur from Canada for his efforts to solve it. The best course appeared to be to determine the frontiers between the different organizations concerned with the prevention of pollution and then find an appropriate role for the Committee. The Rapporteurs were asked to consider the matter before the Group's next session (March 1976) and to put forward concrete proposals at that session in the light of the contacts they had made in the meantime at both the national and the international level.

11. The Rapporteur from the United Kingdom observed that the real danger lay in the possible imposition by other organizations of anti-pollution restrictions on the transport of dangerous goods which the Committee itself might not impose. The procedure suggested did not go far enough, and something more should be done.

12. The Group therefore instructed a working party under the chairmanship of the Rapporteur from Canada to prepare a plan of action for submission by the Group of Rapporteurs to the administrators of the United Nations Environment Programme.

13. The Rapporteur from Canada reported on the work of the small group. The latter proposed that the Secretariat should arrange for the Chairman of the Committee of Experts, accompanied by a delegation of Rapporteurs, to meet a senior official of the United Nations Environment Programme for the purpose of informing him of the Committee's work and considering how the Committee could be associated with efforts to protect the environment.

14. Following that meeting, the Group of Rapporteurs gave instructions to the Secretariat concerning a letter to be sent officially to the Executive Director of the United Nations Environment Programme.

15. During the debate, the representative of IATA remarked that most dangerous goods could cause pollution. The possibility of pollution arose only when there was an accident, and the system of identification to be developed should include measures for the protection of the environment. IATA would not favour the idea of substances harmful to the environment forming a new class with a new hazard label.

Definition of Class 6

16. The Group then considered document E/CN.2/CONF.5/R.452, submitted by the Rapporteur from the Union of Soviet Socialist Republics.

17. The Rapporteur from the Union of Soviet Socialist Republics introduced the document, which proposed stricter criteria for the classification of substances under Division 6.1, particularly volatile substances. With the present criteria, a considerable number of substances had been classified in groups different from those in which they would have been placed had the suggested criteria been used. He therefore proposed, firstly, a classification of toxic substances in three divisions, followed by a modification of the Recommendations pertaining thereto, and the transfer to Class 9 of the substances at present classified in Division 6.2. He also suggested a new label for the new Division 6.1.

18. The Rapporteur from the Union of Soviet Socialist Republics added that his proposals and the present regulations were not mutually exclusive and could very well be used together or combined.

19. The statement by the Rapporteur of the Union of Soviet Socialist Republics gave rise to the following comments.

20. The Rapporteur from France supported the proposal to transfer to Class 9 the infectious substances - which were not listed - covered by Division 6.2. He also saw merit in making use, for volatile toxic substances, of the concept of the threshold temperature of toxicity; for non-volatile toxic substances, a distinction should be made between liquids and solids, since for an equal degree of intrinsic toxicity, liquid substances were more dangerous than solids.

21. In addition to the considerations set forth in a conference room paper, the Rapporteur from the United States expressed the view that the proposal to transfer infectious substances to Class 9 was warranted. He did not think, however, that three new divisions in Class 6 need be established. Rather, criteria dealing with volatility should be incorporated within the existing criteria of Division 6.1. In addition, he felt very strongly that the present Division 6.1 label was representative of the poison hazard, including the inhalation hazard, and that no new label should be introduced. The Rapporteur from France was not in favour of the introduction of a special label showing a gas-mask.

22. The Rapporteur from the United Kingdom said he had read with interest the proposals by the Rapporteur from the Union of Soviet Socialist Republics and shared his doubts as to whether the present Division 6.1 label was an adequate warning of a serious inhalation hazard, especially for highly volatile liquids. The proposals contained in document E/CN.2/CONF.5/R.452 were so far-reaching that, before the Group of Rapporteurs could make any recommendation, serious thought must be given to their implications, i.e. to their feasibility and to the complications to which they might give rise.

23. There was some scope for improving the inhalation toxicity criteria on page 135 of the Supplement (ST/ECA/81/Rev.2/Amend.1, Part I) (the Rapporteur from the United Kingdom had expressed serious reservations on the subject, as noted in the report on the seventh session of the Group of Experts (E/CN.2/CONF.5/49, paras. 86 and 93)). Even if the numerical criteria were improved, however, it was still more important to retain the paragraph which made it clear that any such values could be overridden by other considerations, and to stress that such criteria were for the guidance of the expert, who must also take into account all other relevant factors.

24. The proposal to remove infectious substances from Class 6 represented an important change, which should be given careful thought. If it was in due course approved, the full implications of dividing the present Division 6.1 on the lines suggested should be considered. Owing to its different forms and the difficulty of obtaining comparable data, toxicity was much more difficult to assess than physical criteria such as flash point, boiling point or vapour pressure. Though agreeing that volatility should be taken into account in assessing the inhalation hazards of liquids, he had grave doubts as to the possibility of using the second suggested parameter, namely the LC_{50} value. LC_{50} data were available for only a proportion of liquid dangerous substances. Such data were subject to variation according to test conditions (such as sex, temperature, condition of animals, time of day, etc.). Being a measure of direct toxicity by single controlled exposure, the LC_{50} value did not take into account chronic effects such as damage to various organs and to blood, and other insidious effects.

25. In those circumstances, the Rapporteur from the United Kingdom regarded any system for subdividing Division 6.1 on the basis of exact LC_{50} (or LD_{50}) values as impracticable at present, but he welcomed discussion on possible improvements of the system used for classifying and grouping toxic substances.

26. The Rapporteur from Canada expressed keen interest in the proposals contained in document E/CN.2/CONF.5/R.452 and especially in the emphasis placed on substances which are toxic on inhalation. He supported the proposal for a new label for those substances, though not necessarily a separate division of Class 6. Division 6.1 might be retained, but utilizing Group I and Group II criteria for the inhalation risk of substances having a vapour concentration level in saturated air greater than their LC_{50} expressed in ml/m3 at 35°C or less and at more than 35°C but not more than 55°C respectively. There would be no substances with inhalation risk in Group III. Dermal and oral toxicity criteria could remain as suggested in table 1 for Groups I to III. A separate division, a new 6.2, for food contaminants might also be appropriate, utilizing the criteria in that table and the "ear of wheat" label. Infectious substances could remain in Class 6, in the new Division 6.3, or go to Class 9.

27. The Rapporteur from the Federal Republic of Germany congratulated the Rapporteur from the Union of Soviet Socialist Republics on his effort to improve the criteria for Division 6.1. He welcomed in particular the importance attached to inhalation toxicity. In his opinion, however, prolonged discussion during the session was to be expected before any pronouncement could be made as to the real danger of toxic substances in accidents that might happen during transport in some cases. In fact, LD_{50} and LC_{50} values based on the results of animal tests did not usually characterize the real toxicity hazard during transport. He referred to the existing United Nations criteria for Class 6, Division 6.1, in particular to the three sentences preceding the table giving LD_{50} and LC_{50} limits. The table was based on only one of those sentences unless the effects on man were known and special properties such as liquid state, high volatility, special likelihood of penetration and special biological effects were taken into account.

28. He was of the opinion that at the present stage of hazard evaluation there was no other option than to take into account all those factors in every case, in assessing the toxic hazard of any substance. This had been done at the various sessions of the Group of Rapporteurs since the seventh session of the Committee of Experts, in December 1972.

29. During those discussions it had been possible to give special consideration to inhalation toxicity and dermal toxicity, which had always been regarded as more important than oral toxicity. Very high toxicity by oral intake was also considered important because it was impossible to predict the effects of such substances in cases of spillage.

30. Summing up, his conclusion was that the existing criteria for Division 6.1 were the best at the present time, and he recommended that they should not be changed. He also recommended that the toxic labels for danger Groups I and II, and the existing lists, which were based on long discussions, should remain unchanged.

31. The Rapporteur from the Federal Republic of Germany made the final point that in comparing the vapour of toxic liquids it would be better to use the expression "millilitres per cubic metre" as in the existing criteria. If toxic vapours were compared and the expression "milligrams per litre" were used, the determination was affected by the molecular weights of the different substances, and that gave rise to errors.

32. Finally, after expressing its thanks to the Rapporteur from the Union of Soviet Socialist Republics for his work and proposals, the Group requested him to incorporate them in a revised document taking account of the foregoing comments for consideration at the Group's next session.

LISTING AND CLASSIFICATION

Priorities in classification

33. The Vice-Chairman, Mr. Spencer, who presided over the meeting, explained what was meant by "priorities in classification", regarding which the expert from the United States of America had spoken at the Committee's eighth session.

34. The problem having been stated, the Rapporteur from the United States said he would submit proposals for consideration at the next session.

Information sheet for new substances to be added to the lists

35. The Rapporteur from the United States submitted a model information sheet for new substances to be added to the lists.

36. Some Rapporteurs made critical comments on the importance attached to LD_{50} and LC_{50} and others criticized certain points of detail.

37. In the end, the Group adopted the model information sheet as reproduced in annex 1 to this report.

Listing of various dangerous goods

38. The Group of Rapporteurs requested a small group to examine the various proposals made on this subject, i.e. a draft corrigendum - to be circulated under the symbol E/CN.2/CONF.5/57/Corr. 1 - to annex 2 to the Committee's report on its eighth session, (conference room papers GRPDG/CRP.105 and E/CN.2/CONF.5/R.450) and a series of new proposals dealing with specific cases (E/CN.2/CONF.5/R.453, -/R.459, -/R.461, -/R.463 and -/R.468). It accepted the small group's proposals, as reproduced in annex 2 to this report.

39. The following comments were noted on certain points in the IMCO document (E/CN.2/CONF.5/R.453):

- as regards borneol (4.1.0/1312), it was not considered necessary for the class to be marked;
- calcium resinates (4.1.0/1313 and 1314) should for the time being remain in Division 4.1 (to be reconsidered at the next session);
- copper chlorate is covered by chlorates, n.o.s. (5.1.0/1461);
- hexachloroethane was not included, since its toxicity is not sufficiently high;
- the same applies to isopropyl alcohol;
- thioacetic acid is already included in item 3.0.0/2436;
- toluene sulphonyl chloride (ortho and para) is not a dangerous substance;
- the question of organo-tin compounds was postponed to the next session;
- the question of aluminium powders was postponed to the next session, and the rapporteurs were invited to submit their comments on the proposal by the Rapporteur from the United Kingdom (E/CN.2/CONF.5/R.470), in particular on the subject of pyrophoric aluminium powders.

40. The Group of Rapporteurs considered the proposals submitted by the Government of Chile in document E/CN.2/CONF.5/R.466 concerning iodine, with the participation of experts from that country. The latter set forth their proposals and offered to produce certificates from two large shipping companies according to which no accident had occurred during the transport of iodine.

41. Following a discussion in which the Rapporteurs from the Federal Republic of Germany, France, the United Kingdom and the United States of America and the representative of the International Air Transport Association (IATA) took part, the Group agreed not to include iodine in the lists annexed to the Recommendations.

42. The Rapporteur from the Union of Soviet Socialist Republics pointed out that the decision could be taken on the basis of the properties of the substance and not solely on the basis of any accidents which might have occurred. In his country's Regulations, iodine was listed among dangerous substances. The Rapporteur from the United States of America said that studies on the properties of iodine had been carried out in his country, and the substance could not be considered dangerous.

43. The representative of IATA said that while it was not his organization's intention to add iodine to the lists in its regulations, it would welcome an assurance from the expert from Chile that, in the event of air transport, iodine would be packed in securely closed glass containers, so as to exclude the risk of vapour escaping. The expert from Chile said that he would consider the IATA request, but that in any case there was virtually no air transport of iodine.

Classification of polychlorinated biphenyls

44. The Group was of the opinion that the problem referred to in document E/CN.2/CONF.5/R.357 submitted by the Rapporteur from France was only a particular aspect of the general problem of the protection of the environment

during transport (see paras. 7-15 above). Moreover, there was no need to revert to it since the substances in question had been put into a specified class (Class 9) by decision of the Committee and were therefore already under regulation.

45. The Rapporteur from the Federal Republic of Germany withdrew the reservation he had made following that decision by the Committee (E/CN.2/CONF.5/57, para. 76), to the effect that the classification in Class 9 was not warranted and that paragraph 27 of the Recommendations had not been respected.

GROUPING OF DANGEROUS GOODS FOR PACKING PURPOSES

Class 3 - Inflammable liquids

46. The Chairman suggested that the Group should consider document E/CN.2/CONF.5/R.472 (United Kingdom) and the conference room paper submitted by the Rapporteur from the United States of America. The Rapporteur from France, followed by the Rapporteurs from the Union of Soviet Socialist Republics and the Federal Republic of Germany, protested against the late distribution of those documents, which, moreover, had not been translated into the other two working languages. The Rapporteur from the Federal Republic of Germany said that he was willing, however, to discuss document E/CN.2/CONF.5/ E/CN.2/CONF.5/R.472.

47. After a long discussion on how to avoid the difficulties caused by documents being submitted late, the Group agreed to consider the documents in question, it being understood that the question might be re-opened at the next session.

48. On that understanding, the Group began its consideration of document E/CN.2/CONF.5/R.472, introduced by the Rapporteur from the United Kingdom, who pointed out that his proposals followed from those contained in document E/CN.2/CONF.5/R.347 and, in fact, represented a simplified version of that document. He asked the Group whether it agreed to the principle embodied in his proposals, so that they could be developed, if appropriate.

49. The Rapporteur from the United States of America said he was in favour of the proposals put forward by the Rapporteur from the Federal Republic of Germany, subject to certain changes relating to the temperature at which viscosity was determined. The expert from the Netherlands said that his views were close to those of the Rapporteur from the United States of America.

50. The Rapporteur from the Federal Republic of Germany, withdrawing his earlier proposals contained in E/CN.2/CONF.5/R.402, asked the Rapporteur from the United Kingdom to revise his proposals in document E/CN.2/CONF.5/R.472, the principle of which he approved.

51. The Group finally requested the Rapporteur from the United Kingdom to revise his proposals with a view to their consideration at its next session.

52. During the discussion, the United Kingdom Rapporteur pointed out that some inflammable liquids classified in Group II were also toxic and should therefore be included in Group I, and the IATA representative repeated the opinion that the present system of grouping was based on a wrong approach. Instead of classifying products in Groups I, II or III by degree of danger,

groups of products should have been formed for which identical packaging systems were required. Under the IATA regulations there was a group of 10 highly corrosive products which according to their outside packaging would belong to Group I when the inner receptacle was single and to Group II when it was double.

53. The Group then considered the proposals of the Rapporteur from the United States of America contained in the conference room document above-mentioned, on the understanding that the matter would be brought up again at the next session.

54. From the statement made by the author of that document, it appeared that the proposals therein contained extended beyond the problem of the viscous products specially referred to in document E/CN.2/CONF.5/R.472.

55. Some of the proposals by the Rapporteur from the United States of America were favourably received. Thus, the Rapporteur from France signified his agreement as to Group I, and the Rapporteur from the Union of Soviet Socialist Republics found the proposals satisfactory in principle.

56. After a technical discussion, the Group requested the Rapporteur from the United States of America to submit revised proposals which would be considered at the Group's next session.

Division 6.1

57. The Group found that document E/CN.2/CONF.5/R.440 was no longer relevant since the Rapporteur from the Union of Soviet Socialist Republics had substituted for it the proposals contained in document E/CN.2/CONF.5/R.452, which had been considered under the item "Definitions of classes and divisions" (See paragraphs 16 to 32 of this report).

Class 8

58. The Rapporteur from the Federal Republic of Germany withdrew the proposals contained in document E/CN.2/CONF.5/R.366.

TESTS FOR PACKAGINGS

59. The Group agreed to consider at its next session the proposals of the Rapporteur from the United Kingdom contained in documents E/CN.2/CONF.5/R.469 and 471.

60. The proposals in document E/CN.2/CONF.5/R.408/Rev.1 were introduced by the Rapporteur from the United Kingdom, who pointed out that their purpose was merely to amend one point in the Recommendations.

61. In the end, the Group agreed to the deletion of the reference to an 8 m stacking test and adopted the footnote submitted by the Rapporteur from the United Kingdom (see annex 3 to this report).

ORGANIC PEROXIDES

62. The Rapporteur from the United Kingdom said that work was proceeding on the revision of the proposals made in document E/CN.2/CONF.5/R.425, and that he hoped to be able to submit revised proposals for consideration at the Group's next session.

63. The Group then considered in turn the proposals of the Rapporteur from the Federal Republic of Germany (E/CN.2/CONF.5/R.443) and the IMCO communication (E/CN.2/CONF.5/R.451). The amendments adopted by the Group are reproduced in annex 4 to this report.

64. On certain questions raised in the IMCO communication (E/CN.2/CONF.5/R.451), the Group took the following decisions. The other proposals contained in the document were not adopted.

65. With respect to paragraph 3 of the communication, the Group stated that polyethylenelined metal drums were not covered by "Plastics bottles or jars packed in a metal drum".

66. In reply to paragraphs 4 and 5 of the communication, the Group expressed the view that it was not possible to specify the packagings not requiring an explosive subsidiary risk label, for to do that the packagings and the tests they had to undergo would have to be described in greater detail. Moreover, the question had not been lost sight of by the Committee, which had expressed the view that, for organic peroxides, the levels of the various packaging tests were in some cases left to the discretion of the competent authority.

67. The Group expressed the opinion that the decision to delete the explosive subsidiary risk mark for cyclohexanone peroxide (5.2.0/2117) was not in accordance with the Committee's recommendations. Footnote 4, as applied to Substance 5.2.0/2117, referred only to the use of the 5 kg plastics inner, fibre-board outer, package which had been the subject of tests; other packagings must carry the explosives subsidiary risk label unless they had been tested by the competent authority and found to be non-explosive as transported.

68. With regard to the problem raised in paragraph 7 of the IMCO communication, the Group considered that the procedure outlined in the note included by that organization was the best way to regulate carriage of the substance in question, and a similar note was adopted for inclusion in the Recommendations (see annex 4 to this report).

69. The Group was unable to undertake any useful consideration of the question raised in paragraph 9, owing to the absence of any specific proposals.

70. A long discussion took place, in connexion with paragraph 10 regarding the criteria according to which the carriage of organic peroxides in tanks should be authorized. Finally, the Group took note of the note adopted by IMCO and agreed not to amend the Recommendations for the time being, taking the view that it should wait and see whether the current measures proved satisfactory and refer the matter to a working group; it could revert to the matter afterwards.

71. The Rapporteur from the Union of Soviet Socialist Republics outlined his proposals contained in document E/CN.2/CONF.5/R.417. The Group decided to undertake a thorough consideration of that document at its next session.

72. The Rapporteur from the Federal Republic of Germany suggested that paragraph 7 of chapter II (annex 2, appendix 2, to the Recommendations) (E/CN.2/CONF.5/57, annex 4) might be supplemented by a provision referring to the effect of the packaging material on the decomposition temperature. That idea was taken up by the Rapporteur from the United States of America and adopted by the Group in the form in which it appears in annex 4 to this report.

73. The Group's attention was likewise drawn to a conference room paper submitted by the Rapporteur from the United States of America. It would be considered at the same time as tank-containers (next agenda item).

74. The Rapporteur from the United States of America expressed concern at the figure of 82 per cent adopted by the Group for benzoyl peroxide (5.2.0/2088 and 5.2.0/2090), and requested its reduction to 80 per cent. As the difference of 2 per cent represented an allowance for analytical error, the Group agreed to the Rapporteur's request (see annex 4 to this report).

TANK-CONTAINERS FOR MULTIMODAL TRANSPORT

Recommendations concerning tank-containers for multimodal transport - General requirements

75. The Group adopted the proposal of the Rapporteur from the United Kingdom contained in document E/CN.2/CONF.5/R.455, referring to formulae 1a and 1b in footnote 1 to paragraph 23.2 On the other hand, the proposal in document E/CN.2/CONF.5/R.465, likewise submitted by the Rapporteur of the United Kingdom, was not adopted. The Group nevertheless made an addition to paragraph 28.3 and also, when considering the table relating to Class 8 (part II), to paragraph 19.1. The texts adopted are reproduced in annex 5 to this report.

Class 2

76. The Group opened a general discussion on documents E/CN.2/CONF.5/R.359 and -/R.422 (France), -/R.362 (United States of America), -/R.457 (IMCO) and -/R.465 (United Kingdom) concerning cryogenic liquefied gases. The Rapporteur from the United States of America recalled that document E/CN.2/CONF.5/R.362 had been adopted at the preceding session.

77. The Repporteur from the Federal Republic of Germany requested that the Group should consider the observations made by the Rapporteur from the United Kingdom (E/CN.2/CONF.5/R.465, para.3), which deserved special attention in view of the vital importance of the material used for tank-containers intended for the carriage of cryogenic liquefied gases.

78. The representative of the Permanent International Committee on Acetylene, Oxy-Acetylene, Welding and Allied Industries (CPI) said that he would submit a communication concerning tank-containers for cryogenic gases at the next session. The Rapporteur from the Federal Republic of Germany said that he would submit proposals. The Rapporteur from Canada requested that account should be taken of the requirements resulting from a very cold climate.

79. In the end, the Group decided to consider the matter at its March 1976 session. The Secretariat was requested to arrange for a room to be made available on 25, 26 and 27 February 1976 to a small group which would meet, without interpretation or Secretariat assistance, to consider the problem as a whole.

Divisions 4.1 and 4.2

80. The Group had before it document E/CN.2/CONF.5/R.363 prepared by the Rapporteur of the United States of America and the observations of the Rapporteur of the United Kingdom contained in document E/CN.2/CONF.5/R.465.

81. The Rapporteur from the United States of America drew attention to paragraph 2 of his document, and the Group thereupon set about deciding whether the Recommendations should contain provisions applicable to powdery or granular substances. It was decided that they should, though it was recognized that such substances should be dealt with separately, since the provisions of the general part related to cylindrical containers and not to the non-cylindrical containers often used for the carriage of such dry substances.

82. The Group adopted for Division 4.1 the table reproduced in annex 5 to this report.

83. The Rapporteur from the Federal Republic of Germany expressed reservations regarding the test-pressure value proposed by the Rapporteur from the United States of America, and regarding the reference to paragraph 11.2 of the General Requirements, which the Group had adopted.

84. Before considering the table for Division 4.2, the Group dealt with two problems arising in connexion with most of the substances, namely, the test-pressure and calculation-pressure values, which, as a compromise, were both fixed at 20 kp/cm^2, and the possible limitation to 1 m^3 proposed in document E/CN.2/CONF.2/R.465, which was discussed at length and not adopted.

85. The Group adopted the table reproduced in annex 5 to this report and drafted a provision to serve as an introduction to the special provisions for Divisions 4.1 and 4.2. The text of that provision is also to be found in annex 5 to this report.

Division 5.2

86. Document E/CN.2/CONF.5/R.383, submitted by the Rapporteur from the United Kingdom, was considered, in so far as it related to Division 5.2, in conjunction with a conference room paper submitted by the Rapporteur from the United States of America.

87. The Group adopted the table shown on page 19 of document E/CN.2/CONF.5/R.383, with the deletion of substance 5.2.0/2131, whose case would nevertheless be reviewed by an informal group. The Rapporteur from the United Kingdom re-affirmed his position that, apart from a few exceptions, organic peroxides should not be carried in tank-containers. Those listed in his proposals were transported in such containers by virtue of certain regulations. On that point, he was unable to express any views, as there were not yet any objective criteria available on which to base a definite stand.

88. The three substances whose inclusion in the table had been requested by the Rapporteur from the United States of America were not included. The question will be reconsidered at the next session in the light of further information.

Class 8

89. After establishing the special provisions applicable to tank-containers used for the carriage of corrosive substances (see annex 5 to this report), the Group discussed the calculation- and test-pressure values at length. The Rapporteurs from the Federal Republic of Germany and the United Kingdom proposed that the values to be adopted should match, according to the packing group for the substances, the three levels of values adopted in RID. As a compromise, the rapporteur from the United States of America proposed that the three values should be set at 4 (Group I), 2.65 (Group II) and 1.75 (Group III). This proposal was not adopted by the Group. Since no other solution was found, the table was considered without columns 8 and 9.

90. The Rapporteur from the United Kingdom requested that the substances of Group III should be the only ones to be accepted for carriage in bottom-discharge tank-containers, to allow for maritime transport, while the Rapporteur from the United States of America expressed the view that some substances of Group II should be treated in the same way as those of Group III. The question was not settled in general terms, since the Group felt that a solution could be found for each individual case.

91. The Group adopted the table reproduced in annex 5 to this report.

INTERMEDIATE BULK CONTAINERS (IBCs)

92. The Rapporteur from the United Kingdom introduced document E/CN.2/CONF.5/R.464 and concluded by requesting the Rapporteurs to indicate their views on the subject so that a decision could be reached on the provisions to be included in the Recommendations.

93. The Rapporteur from France raised a terminological problem. In his opinion, the abbreviation CIV could be confused with the initials of the International Convention concerning the Carriage of Passengers and Luggage by Rail, and the word "container" could not cover, at the same time, barrels, sacks, etc. He proposed that the words "grands récipients pour vrac" (GRV) should be used in the French text.

94. The expert from the Netherlands said that he supported the idea presented by the Rapporteur from the United Kingdom. The Rapporteur from the Federal Republic of Germany considered that the purpose of document E/CN.2/CONF.5/R.464 was to fill a gap, but that, in the circumstances, there was no need to go into detail at the present session. The Rapporteur from the Union of Soviet Socialist Republics considered that the document submitted by the Rapporteur from the United Kingdom should be used as a basis for the Group's work and requested that certain rubberized containers used for the carriage of granulated substances should be added to the list in paragraph 3 of document E/CN.2/CONF.5/R.464. The Rapporteur from Canada said that the Rapporteur from the United Kingdom should be encouraged to pursue his work.

95. In conclusion, the Group agreed to resume consideration of the item at its next session.

GAS CYLINDERS

96. The Rapporteur from the United States of America said that he was making available, for consultation by members of the Group, certain documents which would be considered at the next session.

97. The Rapporteur from the United Kingdom announced that he would also submit some proposals based on the work on ADR and on the work of the European Economic Community.

98. The Rapporteur from Canada requested that the item should be discussed on the first or second day of the next session, and the Rapporteur from the United Kingdom said he considered that, in view of the very technical nature of the subject, a working party would have to be set up. The Group decided that the preliminary discussion should take place on the first day of the next session.

UNIT LOADS

99. The IMCO representative said he had submitted document E/CN.2/CONF.5/R.458 for the Group's information. The Rapporteur from the United Kingdom submitted the proposals contained in document E/CN.2/CONF.5/R.462, the purpose of which was to set out guidelines for a section of the Recommendations concerning unit loads.

100. After an exchange of views in which the various Rapporteurs took part, the document submitted by the Rapporteur from the United Kingdom was favourably received in principle by the Group, which agreed to reconsider the matter at its next session.

101. The Rapporteur from France, the expert from the Netherlands and the representative of IATA were of the opinion that each package in a unit load should comply with the requirements laid down for single packages. The Rapporteurs from Canada, the Union of Soviet Socialist Republics and the United States of America said that they could not agree to the unit load being considered a way of grouping packages which did not meet the packaging tests.

102. The Group agreed to use the IMCO text as the basis for its consideration of this question at its session in March 1976.

LABELLING

103. The representative of IRU introduced document E/CN.2/CONF.5/R.350, the purpose of which was to draw the necessary conclusions from the decision taken by the Committee at its seventh session and recorded in paragraph 12 of the report on that session (E/CN.2/CONF.5/49).

104. After a long discussion, in which most of the Rapporteurs expressed their views, the Group decided that IRU's suggestions in regard to paragraphs 44 and 49 should not be adopted at the present session, mainly because that would entail further consideration of their implications for marine transport.

105. The suggestion concerning paragraph 32 would be considered later. The suggestion concerning paragraph 28 was, however, adopted (see annex 6 to this report).

106. The Group then considered the proposal by the Rapporteur from the United States in a conference room paper which was introduced by the proposer. The purpose of the document was to avoid a multiplicity of labels in some cases, as that would detract from the effectiveness of labelling. The Rapporteur from the United States said he would be able to submit at the next session the set of criteria used for compiling a list of substances which could be given a single "toxicity" or "corrosion" label instead of two labels.

107. After an exchange of views, the Rapporteur from the United States said that he would provisionally withdraw his proposals in order to resubmit them in a more complete form at the next session.

108. The Group next considered the proposals of the Rapporteur from the Union of Soviet Socialist Republics concerning the inclusion in the Recommendations of marks to indicate handling precautions (E/CN.2/CONF.5/R.415).

109. The majority of the Group were favourably disposed towards the use of such labels or marks, and it was agreed that the Group should not devise new marks or labels, as some had already been proposed by ISO, but should decide what substances or packagings should bear them. The Group therefore decided to revert to the matter at the next session. The Rapporteur from the Union of Soviet Socialist Republics offered to submit further proposals on the subject.

110. The representative of IATA said that a number of rectangular marks or labels were used in air transport to indicate any precautions that needed to be taken in handling or stowage.

111. Lastly, the Group was told by the Rapporteur from Canada that the purpose of his communication concerning changes in the labelling recommendations . . . . . (E/CN.2/CONF.5/R.413) was merely to present some new ideas which might be useful in the future when the time came to review the labelling system as a whole.

112. Although some Rapporteurs considered that the present system was not entirely satisfactory and therefore welcomed the initiative of the Rapporteur from Canada, the Group nevertheless agreed that it was not yet time to make radical changes in the system.

TRANSPORT DOCUMENT

113. The Group considered the Note by the Secretariat in document E/CN.2/CONF.5/R.454, concerning the possibility of aligning the form of application for forwarding/shipment of dangerous or hazardous goods (annex 4 of the Recommendations) with the ECE layout key (E/CN.2/CONF.5/R.454, annex 3).

114. The document was introduced by the technical adviser to the Working Party on Facilitation of International Trade Procedures, who pointed out that the proposals in question requested the same information as that already required for the existing application form.

115. The Rapporteur from the United States of America said that, whatever the form used, it should include the number of the substance in the United Nations lists. As far as he was concerned, the presentation was of minor importance, but it depended largely on the information to be included in the form.

116. The Rapporteur from the United Kingdom considered that the establishment of a standardized form was acceptable, but that the matter would require careful consideration, if only on account of its implications for RID.

117. The Rapporteur from the Union of Soviet Socialist Republics also considered the matter very important. In his opinion, the form of application for the transport of dangerous goods should be differentiated from other documents, for example by its colour. He then referred to the shortcomings of annex 3 to document E/CN.2/CONF.5/R.454, and proposed, in particular, that the United Nations list number and the gross weight should be included in the form.

118. The representative of IATA said that his organization would not be prepared to modify its application form, which included the particulars recommended in annex 4 to the Recommendations.

119. The representative of OCTI considered that document E/CN.2/CONF.5/R.454 raised questions of substance in relation to RID. That view was endorsed by the Rapporteur from Italy and the expert from the Netherlands, who, in addition, gave his opinion on certain specific points.

120. In conclusion, the Group considered that the question of the presentation of the document did not raise any problem and could be taken as settled in principle. It could be considered definitively, however, only after the Group had studied the information to be included in the form.

HAZARD IDENTIFICATION SYSTEM

121. The Rapporteur from Canada gave an outline of document E/CN.2/CONF.5/R.456, which includes the report of the informal meeting held at Ottawa from 28 to 30 April 1975. Referring to the division of opinion at that meeting between the Rapporteurs in favour of a system based on the measures to be taken and those in favour of a system based on the properties of the products, he stressed that the Ottawa discussions had been frank and cordial.

122. The Rapporteur from the United Kingdom said that he was essentially in favour of a system based on the measures to be taken, similar to the system described in the document submitted by IMCO (E/CN.2/CONF.5/R.448) and explained by that organization's representative, who had said that the two principal systems might be combined.

123. The representative of IATA pointed out that the main principles underlying an efficient system should be the universality and the simplicity of the conventional symbol (two digits), and he expressed the view that the two systems under consideration could be combined accordingly. He described the simple and universal system he had in mind.

124. The Rapporteur from the United Kingdom described the system used in road and rail transport in his country. It consisted of four parts: the United Nations label for the information of the public, the HAZCHEM code to indicate to rescue teams the initial measures to be taken, and finally the United Nations substance number and a telephone number, the last two items of information relating to the action to be taken after the initial emergency measures. His earlier statement that the system should be based on the measures to be taken applied particularly to the code for initial measures. To have to read an instruction leaflet to know what to do first would be unacceptable. The real point of divergence was the code number. If universality could not be attained on that point, it would at least be necessary to evolve code systems which were not incompatible.

125. The Rapporteur from the Union of Soviet Socialist Republics said that the various existing systems all had their advantages and disadvantages. In his opinion, the system adopted should be universal and simple. It might be based on the principles which had been described at the sixteenth session of the Group of Rapporteurs and at the eighth session of the Committee. It would consist first of the United Nations label, then the substance number - but using a revised United Nations numbering system - and, lastly, a very simple code number of four figures in accordance with the four principles proposed by the Rapporteur from Canada in document E/CN.2/CONF.5/R.442. There was no point in giving a telephone number; it was impossible to get clear information over the telephone when different languages were being spoken.

126. The point of view of the Rapporteur from Italy was very similar to that of the Rapporteur from the Union of Soviet Socialist Republics. He observed that the code system for initial action was mainly a matter for the individual country concerned; consequently, the most important factor in his opinion was identification of the hazard and of the substance. He was in favour of using the substance numbers in the United Nations lists as they stood. Letters should not be used, and he was in favour of United Nations labels being affixed to indicate the type of hazard. Endorsing the view previously expressed by the Rapporteur from the Union of Soviet Socialist Republics, he said there was little point in including the telephone number of the competent service, as recommended by the Rapporteur from the United Kingdom. In short, the system should be very simple and similar to that adopted in ADR and RID: the United Nations label, the number of the substance in the United Nations list and the code number indicating, primarily, the hazard.

127. The Rapporteur from the United States of America said that what was needed was a system capable of conveying the basic information to anyone and not only to qualified firemen: only in 200 of the 3,200 accidents in which the competent service had intervened in the United States of America had specialist fire-fighting skills been required. He was not in favour of a combination of letters and figures, but preferred figures comprehensible to everyone. The instructions could be very simple. The number of the substance in the United Nations lists did not have the importance attributed to it, since most of the persons concerned were not familiar with those lists. The ADR system could, in his opinion, serve as a basis for a universal system.

128. The Rapporteur from France then explained the French system, from which the ADR system was derived. Referring to information for the public, he said that the use of United Nations labels involved gaps, and this made it advisable to have a two- or three-figure system for indicating the presence of subsidiary hazards. The figures should always have the same meaning and should express only the hazard, leaving the intervention services to take the initial emergency measures indicated on the card. The card was carried in the vehicle and was also available at the emergency centres.

129. The Rapporteur from the Federal Republic of Germany, referring to the prolonged discussions which had taken place at the European level, expressed the view that the study by the Rapporteur from Canada should serve as a basis for the work. He noted, from that document, that there had been agreement on the first and third phases. The United Nations label corresponded to the first phase of emergency action and the United Nations number to the third phase. On the other hand, no agreement had been reached at Ottawa on the intermediate phase. Was it really necessary to have the abbreviated code for that phase? It was not enough to know whether a substance was inflammable or extremely inflammable. What mattered was to have an exact description of the substance, and that excluded the abbreviated code.

130. An expert from the Netherlands reported on the results of using the system in force in his country, which broadly followed the ADR requirements. He laid special emphasis on the need, in any system, for information to be comprehensible to the public and stressed that, unlike the ADR system, the abbreviated code system should provide information on the action to be taken.

131. On the suggestion of the Rapporteur from Canada, the Chairman then invited non-governmental organizations which had not yet done so to make known their views.

132. The representative of CEFIC (European Council of Chemical Manufacturers' Federations) was of the opinion that a code indicating the action to be taken would be the most appropriate, and that the system described by the Rapporteur from the United Kingdom was the best. Nevertheless, he did not consider it useful to indicate the telephone number and thought that the combinations of letters and figures might perhaps be converted into figures.

133. Referring to the code system itself, the representative of IRU noted that certain Rapporteurs had advocated a code indicating the properties of the substance and others a system indicating the action to be taken. He wondered whether the two were really irreconcilable. In his opinion, two digits gave less information than three. Consequently, he would be inclined to favour a three-digit code. He doubted the usefulness of the United Nations number. Nevertheless, he would agree to it provided it was written in smaller figures than those of the abbreviated code system, so that only the latter, indicating emergency measures, would be read first. It did not seem essential to add the United Nations label. The telephone number of the competent service was useful at the national level, but was hardly appropriate in an international system. It should therefore be made optional.

134. The representative of the International Chamber of Shipping (ICS) drew attention to the special requirements of maritime transport, so clearly brought out in the document submitted by IMCO (E/CN.2/CONF.5/R.448). In his view, it was necessary to adopt, not a single system, but a single principle for all modes of transport.

135. The representative of OCTI noted that rail traffic had its special characteristics and would be adaptable to any system offering some degree of stability.

136. The representative of IMCO then added a few remarks to his previous statement on document E/CN.2/CONF.5/R.448.

137. After summing up, the Rapporteur from Canada proposed that a working group be set up to draft the paragraphs relating to areas of agreement. The Rapporteur from the United Kingdom objected to the establishment of such a group before a decision had been taken on certain principles, including the choice between an abbreviated code system based on the nature of the hazard and a system based on the action to be taken.

138. Eventually, after a discussion in which Rapporteurs weighed up the merits and shortcomings of the various systems according to their preferences, the Group agreed to ask a small group, under the chairmanship of the Rapporteur from Canada, to identify the areas of agreement and, in particular, to study the question of an abbreviated code.

139. The Group of Rapporteurs took note of the report of the small group and endorsed its conclusions (see annex 7 to this report). It congratulated the chairman of the group on the work accomplished.

140. The Rapporteur from France, on behalf of his Government, entered the most explicit reservations concerning the interpretation of the results of the unusual consultations held by the working group. Option 4 was definitely not his country's preference.

141. The Rapporteur from the United States of America associated himself with the statement by the Rapporteur from France, especially as regards option 4.

142. The representative of IRU made the following observations:

(a) The use of letters was out of the question in a code which purported to be world-wide, because of the existence of the Latin, Cyrillic, Greek and Arab alphabets and the scripts, alphabetic or otherwise, of the countries of the Near, Middle and Far East.

(b) The association of codes based on action to be taken and on the properties of substances, together with the United Nations number and label, would appreciably increase the size of the plates.

(c) Above all, if three superimposed numbers comprising a total of 8-10 digits were used, they could very easily be read off incorrectly - with incalculable consequences - by persons witnessing an accident.

The IRU representative considered that the HIS should consist of two numbers only:

- a two- or three-digit number, in very large characters, based either on the action to be taken or on the properties of the substance;

- a four-digit number, in much smaller characters, corresponding to the United Nations number, if any.

INTERNATIONAL CONVENTION ON THE CARRIAGE OF DANGEROUS GOODS FOR ALL MODES OF TRANSPORT

143. The Secretariat informed the Group that it would take immediate action on that part of the resolution adopted by the Economic and Social Council on 30 July 1975 which called for consultations with the international organizations referred to in the resolution, and the results of those consultations would be submitted to the Group of Rapporteurs for consideration at its next session.

144. At the request of the Rapporteur from the Union of Soviet Socialist Republics, a general exchange of views took place in which the Rapporteur from the United Kingdom and the representative of IATA drew attention to the problems connected with the legal implications of a Convention of that kind. IATA had convened an international governmental conference at Geneva in February 1975 which produced a resolution in favour of an international Convention. The Rapporteur from the Union of Soviet Socialist Republics offered to prepare a study on the matter to be considered at the Group's next session.

PUBLICATION OF THE RECOMMENDATIONS

145. The Secretariat informed the Group that the Economic and Social Council, in a resolution adopted on 30 July 1975, had requested the Secretary-General to redraft and to publish the Recommendations in printed form. The financial implications of their publication in English, French, Russian and Spanish, estimated at US$ 105,000 had been brought to the attention of the Council and would be submitted to the United Nations General Assembly together with a proposal for their inclusion in the 1976-1977 budget.

146. The Secretariat intends to submit, for consideration at the Group's next session (March 1976), an outline format for the new version of the Recommendations, taking into account the limits imposed by the financial resources to be assigned for that purpose. Once approved, the recasting work will be completed as soon as possible.

147. In view of the considerable sum involved, it would be wise to ensure that the recast version is as complete as possible. The Secretariat therefore suggested that the Group of Rapporteurs should make every effort to complete the Recommendations at its next session. The provisions adopted by the Group at its present session and at its next session would then be submitted to those experts of the Committee who do not participate in the work of the Group, with a view to obtaining their assent before printing.

148. The Group approved this procedure.

FUTURE WORK

149. The Group considered the proposals of the Rapporteur from Canada contained in document E/CN.2/CONF.5/R.447/Add.1 relating to the calendar of work.

150. It was agreed that the agenda should include, as in the past, all those items in respect of which instructions had been received from the Committee. Priority would be given to tank-containers and to the hazard identification system.

Annex 1

INFORMATION SHEET FOR NEW SUBSTANCES TO BE ADDED TO THE UNITED NATIONS LISTS

adopted by the Group of Rapporteurs

The following information is required where applicable to the substance being considered for classification:

CHEMICAL NAME _____

OTHER NAMES (if any) _____

CHEMICAL FORMULA _____

PHYSICAL STATE: Describe appearance at standard conditions

.....

.....

PROPOSED CLASSIFICATION - CLASS _____ GROUP _____

FLASH POINT _____ °C _____ °F ☐ Open cup ☐ Closed cup

_____ Other

BOILING POINT _____ °C _____ °F ☐ Not applicable

MELTING POINT _____ °C _____ °F ☐ Not applicable

VAPOUR PRESSURE at 20 °C _____

SPECIFIC GRAVITY at 20/20°C _____

TOXICITY: LD_{50} Oral _____ mg/kg

LD_{50} Dermal _____ mg/kg

LC_{50} Inhalation _____ ml/m3

SKIN EXPOSURE: (Define test and results)

Test used .....

.....

Results .....

.....

OXIDIZER: [ ] Strong [ ] Medium [ ] Weak

SELF-REACTIVE OR POLYMERIZING [ ] Yes [ ] No

If yes, explain .....

CORROSIVITY ON STEEL _____ mm or inches/year at _____ temp.

ALUMINIUM _____ mm or inches/year at _____ temp.

HUMAN EXPERIENCE

TOXICITY:	ORAL	SKIN	INHALATION
HIGHLY	_____	_____	_____
MODERATELY	_____	_____	_____
LOW	_____	_____	_____
NO	_____	_____	_____

SKIN EXPOSURE

ADDITIONAL COMMENTS _____

_____

_____

_____

_____

Annex 2 - Annexe 2

LISTING AND CLASSIFICATION

ENUMERATION ET CLASSIFICATION

Amendments adopted by the Group of rapporteurs

Modifications adoptées par le Groupe de rapporteurs

N.B. For organic peroxides, see annex 4.

Pour les peroxydes organiques, se reporter à l'annexe 4.

(1) Additions to the lists - Additions aux listes

8.0.0/2564	Trichloracetic acid, solution	Acide trichloracétique en solution	II
8.0.0/2565	Dicyclohexylamine	Dicyclohéxylamine	III
3.0.0/2566	Tetramethyl ethylene diamine (1,2 bis (dimethylamino ethane)	Tétraméthylène diamine (Bis (diméthylamino)-1,2 éthane)	II
-	1,2 bis (dimethylamino) ethane, see "Tetramethyl ethylene diamine" - 3.0.0/2566	Bis (diméthylamino)-1,2 éthane, voir Tétraméthylène diamine - 3.0.0/2566	
6.1.0/2567	Sodium pentachlorophenate	Pentachlorophénate de sodium	II
5.1.0/2568	Dichlorotriazinetrione and its salts with separate entries for the suitable cross reference to the main entry :	Dichlorotrionetriazine et ses sels avec rubriques distinctes pour les matières ci-après et renvois appropriés à la rubrique principale :	II
	Dichloroisocyanuric acid, dry	Acide dichloro-isocyanurique, sec	
	Sodium dichloroisocyanurate	Dichloro-isocyanurate de sodium	
	Potassium dichloroisocyanurate	Dichloro-isocyanurate de potassium	
	Potassium dichloro-s-triazinetrione	Dichloro s-trionetriazine potassique	
	Sodium dichloro-s-triazinetrione	Dichloro s-trionetriazine sodique	
	Chlorocyanuric acids and their salts	Acides chlorocyanuriques et leurs sels	
5.1.0/2569	Trichloro-s-triazinetrione and its salts, dry with separate entries for the suitable cross reference to the main entry :	Trichloro s-trionetriazine et ses sels, secs avec rubriques distinctes pour les matières ci-après et renvois appropriés à la rubrique principale :	II

	Trichloroisocyanuric acid, sec Chlorocyanuric acids and their salts Mono (trichloro) - tetra (mono-potassium dichloro) - penta-s-triazinetriones	Acide trichloro-isocyanurique, sec Acides chlorocyanuriques et leurs sels Mono -trichloro) - tétra (mono-potassium dichloro) penta s-trionetriazines		
6.1.0/2570	Cadmium compounds, except Cadmium selenide and Cadmium sulphide	Composé du cadmium, à l'exception du séléniure de cadmium et du sulfure de cadmium		III
8.0.0/2571	Ethylsulphuric acid (Ethylsulphate)	Acide éthylsulfurique (Sulfate acide d'éthyle, hydrogénosulfate d'éthyle)		II
-	Ethylsulphate, see "Ethylsulphuric acid" - 8.0.0/2571	Sulfate acide d'éthyle, voir "Acide éthylsulfurique" - 8.0.0/2571		
-	-	Hydrogénosulfate d'éthyle, voir "Acide éthylsulfurique" - 8.0.0/2571		
6.1.0/2572	Phenylhydrazine	Phénylhydrazine		II
6.1.0/2573	Thallium chlorate	Chlorate de thallium	5.1	II
6.1.0/2574	Tricresylphosphate with more than 3 % ortho isomer (TCP, Tritotylphosphate)	Phosphate tricrésylique (Phosphate de tolyle) contenant plus de 3 % d'isomère ortho		II
-	TCP, see "Tricresyl phosphate..." - 6.1.0/2574	Phosphate de tolyle, voir "Phosphate tricrésylique..." - 6.1.0/2574		
6.1.0/2575	Vanadium compounds, n.o.s.	Composés du vanadium, n.s.a.		II
8.0.0/2576	Phosphorus oxybromide, molten	Oxybromure de phosphore, fondu		II
8.0.0/2577	Phenylacetyl chloride	Chlorure de phénylacétyle		II
8.0.0/2578	Phosphorus trioxide	Trioxyde de phosphore		III
8.0.0/2579	Piperazine (Diethylene diamine, Pyrazine hexahydride)	Pipérazine (Diéthylène diamine, hexahydropyrazine)		III
-	Diethylene diamine, see "Piperazine" - 8.0.0/2579	Diéthylène diamine, voir "Pipérazine" - 8.0.0/2579		

-	Pyrazine hexahydride, see "Piperazine" - 8.0.0/2579	Hexahydropyrazine, voir "Pipérazine" - 8.0.0/2579	
8.0.0/2580	Aluminium bromide, solution	Bromure d'aluminium en solution	III
8.0.0/2581	Aluminium chloride, solution	Chlorure d'aluminium en solution	III
8.0.0/2582	Ferric chloride (Iron chloride, Iron perchloride, Iron sesquichloride), solution	Chlorure ferrique (Perchlorure de fer) en solution	III
-	Iron chloride, see "Ferric chloride" - 8.0.0/2582	Perchlorure de fer, voir "Chlorure ferrique" - 8.0.0/2582	
-	Iron perchloride, see "Ferric chloride" - 8.0.0/2582		
-	Iron sesquichloride, see "Ferric chloride" - 8.0.0/2582		
8.0.0/2583	Alkyl, aryl and toluene sulphonic acids, solid, containing more than 5 % of free sulphuric acid	Acides alkyl, aryl et toluène sulfoniques solides contenant plus de 5 % d'acide sulfurique libre	II
8.0.0/2584	Alkyl, aryl and toluene sulphonic acids, liquid, containing more than 5 % of free sulphuric acid	Acides alkyl, aryl et toluène sulfoniques liquides contenant plus de 5 % d'acide sulfurique libre	II
8.0.0/2585	Alkyl, aryl and toluene sulphonic acids, solid, containing not more than 5 % of free sulphuric acid	Acides alkyl, aryl et toluène sulfoniques solides ne contenant pas plus de 5 % d'acide sulfurique libre	III
8.0.0/2586	Alkyl, aryl and toluene sulphonic acids, liquid, containing not more than 5 % of free sulphuric acid	Acides alkyl, aryl et toluène sulfoniques liquides ne contenant pas plus de 5 % d'acide sulfurique libre	III

(2) Amendments to the lists - Modifications aux listes

2.0.0/1081	Add subsidiary risk class 3	Ajouter le risque subsidiaire de la classe 3
4.2.0/1361	Should read : "Carbon, non activated, of animal or vegetable origin (non activated carbon; charcoal, non-activated; non-activated charcoal; carbon black, lamp black)"	Lire : "Charbon non actif d'origine animale ou végétale (charbon non activé; noir de carbone; noir de fumée)"
-	Cross references for synonyms	Renvois aux synonymes
4.2.0/1362	Should read : "Carbon activated (activated carbon; charcoal, activated; activated charcoal)"	Lire : "Charbon actif (charbon activé)"
-	Cross references for synonyms	Renvois aux synonymes
6.1.0/1642	Should read : "Mercury oxycyanate, phlegmatized"	Lire : "Oxycyanure de mercure flegmatisé"
3.0.0/1995	Should read : "Pesticides, liquid, toxic, n.o.s."	Lire : "Pesticides liquides toxiques, n.s.a."
3.0.0/1996	Should read : "Pesticides, liquid, non-toxic, n.o.s."	Lire : "Pesticides liquides non toxiques, n.s.a."
3.0.0/2344	Should read : "Bromopropanes (Isopropyl bromide)"	Lire : "Bromopropanes (Bromure d'isopropyle)"
-	Isopropyl bromide, see "Bromopropanes" - 3.0.0/2344	Bromure d'isopropyle, voir "Bromopropanes" - 3.0.0/2344

3.0.0/2353	Should read : "Butyl chloride (Butyroyl chloride)"	Lire : "Chlorure de butyrile (Chlorure de butyroyle)"
-	Butyroyl chloride, see "Butyl chloride" - 3.0.0/2353	Chlorure de butyroyle, voir "Chlorure de butyrile" - 3.0.0/2353
8.0.0/2502	Should read : "Valeryl chlorides"	Lire : "Chlorures de valéryle"
-	Iso-Valeroyl chloride, see "Valeryl chlorides" - 8.0.0/2502	Chlorure d'isovaléryle, voir "Chlorures de valéryle" - 8.0.0/2502

(3) Deletions from the lists - Suppressions des listes

4.2.0/1377	To be deleted	A supprimer
8.0.0/1899	To be deleted	A supprimer
8.0.0/2223	To be deleted	A supprimer
8.0.0/2499	To be deleted	A supprimer
8.0.0/2540	To be deleted	A supprimer
8.0.0/2543	To be deleted	A supprimer
8.0.0/2544	To be deleted	A supprimer

Annex 3

TESTS FOR PACKAGINGS

Annex 2: Recommendations in respect of the Packaging of dangerous goods

Amendments adopted by the Group of Rapporteurs

4.2.7.2.6.3. Delete the last sentence:

"However, for sea transport, when packages are not stowed on deck or in a freight container, the height to be taken into consideration is 8 m."

Add the footnote:

"The packagings are not suitable for stacking in stacks exceeding 3 m."

Annex 4

PARTICULAR REQUIREMENTS FOR ORGANIC PEROXIDES

(Recommendations, annex 2, appendix 2) as adopted by the Committee at its eighth session (E/CN.2/CONF.5/57, annex 4)

Amendments adopted by the Group of Rapporteurs

LIST OF ORGANIC PEROXIDES

5.2.0/2088 Entry should read:

"Benzoyl peroxide - more than 80% but less than 95% with water".

5.2.0/2090 Entry should read:

"Benzoyl peroxide - not more than 80% with water".

5.2.0/2123 Entry should read:

"Di (2-ethylhexyl) peroxydicarbonate

Max. 67% in solution".

Controlled temperature should be - 15°C.

5.2.0/2131 Packaging 1(d) should be added in column (4).

5.2.0/2139 Packaging 1(f) should be deleted.

5.2.0/2142 Entry should read:

"tert. Butyl perisobutyrate - more than 52% but not more than 77% in solution".

5.2.0/2562 (New) New entry to read:

"tert. Butyl perisobutyrate - Max. 52% in solution".

No subsidiary risk E.

Controlled temperature: + 15°C.

Packaging: 1(e), 3(b) and 51.

Recommended packaging: Group II.

5.2.0/2162 Packagings 38, 39 and 47 should be added.

5.2.0/2163 Controlled temperature should be + 30°C (instead of + 25°C).

5.2.0/2164 Controlled temperature should be + 20°C (instead of 10°C).

[5.2.0/2169 Controlled temperature should be - 10°C (instead of 0°C).]

[5.2.0/2170 Controlled temperature should be - 10°C (instead of 0°C).]

5.2.0/2171 Packagings 39 and 47 should be added.

5.2.0/2550 Item should read:

"... Max. 50% with not more than 10% available oxygen".

New item to be inserted:

5.2.0/2563 (New) "Methyl ethyl ketone peroxide(s)

Max. 50% with more than 10% available oxygen".

Same packagings as for 5.2.0/2550.

Add the following note:

"The competent authority may authorize shipment of this substance provided test results show that the formulation does not possess explosive properties".

5.2.0/2182 Controlled temperature should be - 20°C.

CHAPTER II, paragraph 7

Add at the end:

"... commercial packaging used both in size and in materials".

Annex 5

DRAFT RECOMMENDATIONS CONCERNING MULTIMODAL TANK-CONTAINERS
(E/CN.2/CONF.5/57, annex 3)

Amendments adopted by the Group of Rapporteurs

GENERAL REQUIREMENTS

Add the following in Section 19, "Pressure relief devices":

"19.1. Pressure relief devices shall be designed to prevent the entry of foreign matter, the leakage of liquid and the development of any dangerous excess pressure."

23.2. In footnote 1 to paragraph 23.2 amend the definitions of factor F to read as follows:

Formula 1(a):

"F = insulation factor; use 1 for uninsulated tanks and $\frac{8U\ (649 - t)}{93.5 \times 10^6}$ for insulated tanks, where t is the temperature in °C of the vapour or gas in the tank as the device is venting;"

Formula 1(b):

"F = insulation factor; use 1 for uninsulated tanks, and $\frac{8U\ (1,200 - t)}{34,500}$ for insulated tanks, where t is the temperature in °F of the vapour or gas in the tank as the device is venting;"

28.3. Amend the end to read:

"... of corrosion-resistant materials a minimum corrosion allowance fixed by the competent authority should be provided."

SPECIAL REQUIREMENTS RELATING TO TANK-CONTAINERS FOR THE CARRIAGE OF INFLAMMABLE SOLIDS AND SUBSTANCES LIABLE TO SPONTANEOUS COMBUSTION (CLASS 4)

49. Reference should be made to the table in part II of this document, setting out the special requirements for individual substances of this Class. No provision has been prepared for the majority of Division 4.1 solids, because they can be carried quite safely in containers other than tank-containers.

SPECIAL REQUIREMENTS RELATING TO TANK-CONTAINERS FOR THE CARRIAGE OF OXIDIZING SUBSTANCES AND ORGANIC PEROXIDES (CLASS 5)

50. The following general requirements relate particularly to tank-containers for the carriage of oxidizing substances and organic peroxides (Class 5). Reference should also be made to the table, in part II of this document, setting out special requirements for individual substances of this Class.

51. When prescribed in part II for the carriage of certain liquid oxidizing substances or of certain liquid organic peroxides, shells of tank-containers shall be equipped with a venting device fitted with a flame-trap followed in series by a safety valve opening automatically at a pressure of 1.8 to 2.2 kg/cm^2 (25.6 to 31.3 psig) (gauge pressure).

SPECIAL REQUIREMENTS RELATING TO TANK-CONTAINERS FOR THE CARRIAGE OF CORROSIVE SUBSTANCES (CLASS 8)

54. The following general requirements relate particularly to tank-containers for the carriage of corrosive substances (Class 8). Reference should also be made to the table, in part II of this document, setting out special requirements for individual substances of this Class.

55. Tank-containers for corrosive liquids shall be constructed of material which is either:

(i) substantially immune to attack by the substance carried; or

(ii) properly passivated or neutralized by chemical reaction with that substance; or

(iii) lined with other corrosion-resistant material directly bonded to the material of the tank shell or attached thereto by equivalent means.

55.1. Lining material shall be substantially immune to attack by the substance carried, homogenous, non-porous, and not less elastic than the material of the tank shell, and shall have compatible thermal-expansion characteristics.

55.2. The lining of every tank shall be continuous and shall extend around the face of any flanges provided for external fittings. Where external fittings are welded to the tank, the lining shall be continuous through the fitting and around the face of external flanges.

55.3. Where tank fittings and pipework of tanks for corrosive liquids can come into contact with the substance carried they should preferably be of a material resistant to attack by that substance in the conditions of a marine environment. If they are lined, the lining shall be continuous, be resistant to corrosion and erosion, and extend round the face of external flanges.

55.4. The pressure relief devices of tank-containers used for the carriage of Class 8 substances shall be inspected at intervals not exceeding one year.

55.5. Certain products which react readily with water to produce hydrochloric or similar halogen acids, such as silicon tetrachloride, may be carried, dry, in tanks made of mild steel, except for fittings which may become corroded by contact with the product in the presence of moist air. This is mentioned in part II. Furthermore, aluminium, copper and its alloys, tin, zinc and certain stainless steels are unsuitable materials for the construction of tanks or fittings for such products.

TABLES

The tables for Divisions 4.1, 4.2 and 5.2 and for Class 8 are reproduced below.

DIVISION 4.1 INFLAMMABLE SOLIDS

Substance	UN number	UN group	Additional labels required	Minimum tank pressures (kp/cm^2)		Minimum shell thickness	Bottom openings	Material not to be used	Pressure relief requirements	Degree of filling (see para. 33)	Special requirements
				calc.	test						
1	2	3	4	5	6	7	8	9	10	11	12
Naphthalene, molten	2304	III	-	4	See para. 11.2	See para. 15.2	Allowed		See paras. 21 and 22	33.4	
Sulphur, molten	2448	III	-	4	See para. 11.2	See para. 15.2	Not allowed		See paras. 21 and 22	33.4	

DIVISION 4.2 SUBSTANCES LIABLE TO SPONTANEOUS COMBUSTION

Substance	UN number	UN group	Additional labels required	Minimum tank pressures (kp/cm^2)		Minimum shell thickness	Bottom openings	Material not to be used	Pressure relief requirements	Degree of filling (see para. 33)	Special requirements
				calc.	test						
1	2	3	4	5	6	7	8	9	10	11	12
Aluminium triethyl	1102	I	-	20	20	See para. 15.1	Not allowed		Normal	33.2	2 kp/cm^2 nitrogen blanket required
Aluminium trimethyl	1103	I	-	20	20	See para. 15.1	Not allowed		Normal	33.2	2 kp/cm^2 nitrogen blanket required
Diethyl aluminium chloride	1101	I	-	20	20	See para. 15.1	Not allowed		Normal	33.2	2 kp/cm^2 nitrogen blanket required, keep dry
Diethylmagnesium	1367	I	-	20	20	See para. 15.1	Not allowed		Normal	33.2	2 kp/cm^2 nitrogen blanket required
Diethylzinc	1366	I	-	20	20	See para. 15.1	Not allowed		Normal	33.2	2 kp/cm^2 nitrogen blanket required
Dimethylmagnesium	1368	I	-	20	20	See para. 15.1	Not allowed		Normal	33.2	2 kp/cm^2 nitrogen blanket required
Dimethylzinc	1370	I	-	20	20	See para. 15.1	Not allowed		Normal	33.2	2 kp/cm^2 nitrogen blanket required
Ethyl aluminium dichloride	1924	I	-	20	20	See para. 15.1	Not allowed		Normal	33.2	2 kp/cm^2 nitrogen blanket required
Ethyl aluminium sesquichloride	1925	I	-	20	20	See para. 15.1	Not allowed		Normal	33.2	2 kp/cm^2 nitrogen blanket required
Methyl aluminium sesquibromide	1926	I	-	20	20	See para. 15.1	Not allowed		Normal	33.2	2 kp/cm^2 nitrogen blanket required
Methyl aluminium sesquichloride	1927	I	-	20	20	See para. 15.1	Not allowed		Normal	33.2	2 kp/cm^2 nitrogen blanket required
Phosphorus, white under water	1381	I	-	10	4	See para. 15.1	Not allowed		Normal		Water layer required
Triisobutyl aluminium	1930	I	-	20	20	See para. 15.1	Not allowed		Normal	33.2	2 kp/cm^2 nitrogen blanket required

DIVISION 5.2 ORGANIC PEROXIDES

Substance	UN Number	Additional labels required	Minimum tank pressures (kp/cm^2) calc.	test	Minimum shell thickness	Bottom openings	Material not to be used for tank or fittings	Pressure relief requirements	Degree of filling (see para.33)	Special requirements
Cumene hydroperoxide	2120	-	4	4		Not allowed	All metals except aluminium and compatible alloy steel	See para. 51	80% at 15° C	White tank and sun-shield required. Non-metallic liners permissible.
P-menthane hydroperoxide	2125	-	4	4		Not allowed	All metals except aluminium and compatible alloy steel	See para. 51	80% at 15° C	White tank and sun-shield required. Non-metallic liners permissible.
Pinane hydroperoxide	2162	-	4	4		Not allowed	All metals except aluminium and compatible alloy steel	See para. 51	80% at 15° C	White tank and sun-shield required. Non-metallic liners permissible.

CLASS 8: CORROSIVE SUBSTANCES

Substance	UN Number	UN Group	Vapour pressure (psia)		Specific gravity	Additional labels required	Min. tank pressures (kg/cm^2)		Min. shell thickness	Bottom openings	Material not to be used	Pressure relief required	Degree of filling (see para.33)	Special requirements
			45° C	65° C			calc.	test						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Acetic anhydride	1715	II	0.8	1.6	1.08 at 20° C	-			See para. 15.2	Allowed. See para. 17.2.1.	Incompatible plastics, mild steel,	Normal	33.1	
Acetyl bromide	1716	I	6.0	13.0	1.66 at 16° C	-			See para. 15.2	Not allowed	See para. 55.5	See para. 19.2.1	33.2	Keep dry
Acetyl chloride	1717	I	12.0	22.0	1.105 at 20° C	3			See para. 15.2	Not allowed	See para. 55.5	See para. 19.2.1	33.2	Keep dry, shade from radiant heat
Acetyl Iodide	1898	II	2	5	2.067 at 0° C	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry
Acid butyl phosphate	1718	III	<0.05	< 0.10	1.12 at 20° C	-			See para. 15.2	Allowed	-	Normal	33.1	
Alkane sulphonic acids	1899	II	<0.2	< 0.2	Varies	-			See para. 15.2	Allowed	-	Normal	33.1	

Class 8 CORROSIVE SUBSTANCES (Contd)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Allyl chloro-formate	1722	I	2	5	1.14 at 0°C	-			See para. 15.2	Not allowed	See para. 55.5	See para. 19.2.1	33.2	Keep dry
Allyl iodide	1723	I	2	5	1.848 at 12°C	-			See para. 15.2	Not allowed	See para. 55.5	SP. See para. 19.2.1	33.2	Breathing apparatus recommended. Keep dry
Allyl trichloro-silane	1724	II	-	-	1.217 at 27°C	-			See para. 15.2	Allowed	See para. 55.5	Normal	33.1	Keep dry
Amyl trichloro-silane	1728	II	-	-	1.137 at 25°C	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry
Anisoyl chloride	1729	II	-	-	-	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.5	Keep dry
Antimony pentach-loride, anhydrous & in solution	1730, 1731	II	0.015 at 22.7°C	-	2.336 at 25°C	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry
Antimony penta-fluoride	1732	II	0.15 at 22.7°C	-	2.336 at 25°C	6			See para. 15.2	Not allowed	See para. 55.5	See para. 19.2.1	33.2	Keep dry
Benzoyl chloride	1736	II	0.02 at 32.1°C / 0.032 at 45°C	0.124	1.2188 at 15.56°C	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry
Benzyl bromide	1737	II	-	-	1.438 at 16°C	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Breathing apparatus recommended. Keep dry

Class 8 CORROSIVE SUBSTANCES (Contd)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Benzyl chloro-formate	1739	I	-	-		-			See para. 15.2	Not allowed	See para. 55.5	See para. 19.2.1	33.2	Breathing apparatus recommended. Keep dry
Bromine and solutions of bromine	1744	I	9.3 for Br_2	16.75 for Br_2	3.119 at 20°C	-			See para. 15.1	Not allowed		See para. 19.2.1	33.2	5 mm lead or other compatible lining required
Bromacetic acid, solution	1938	II	-	-	1.93	-			See para. 15.2	Allowed. See para. 17.2.1	Mild steel	Normal	33.5	
Butyltri-chlorosi-lane	1747	II	-	-	1.1608 at 25°C	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	See para. 19.2.1	33.2	Keep dry
Calcium hydrogen sulphite solution	1901	II	-	-	1.06	-			See para. 15.2	Allowed	Mild steel	Normal	33.1	
Chloro-aetic acid, liquid	1750	II	-	-	1.37 at 70°C	-			See para. 15.2	Allowed. See para. 17.2.1	Mild steel	Normal	33.1	
Chloroa-cetyl chloride	1752	II	Nil. Boiling point at 105°C	Nil	1.495 at 0°C	-			See para. 15.2	Not allowed	Mild steel	Normal	33.1	Breathing apparatus recommended. Keep dry
Chloroph-enyl tri-chlorosi-lane	1753	II	-	-	1.439 at 25°C	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry
Chloro-sulphonic acid	1754	I	0.02 at 32°C		1.77 at 20°C	-			See para. 15.2	Not allowed	[Mild steel] [See para. 55.5]	See para. 19.2.1	33.2	Keep dry
Chromic acid, aqueous solution	1755	II	-	-	2.67-2.82	-			See para. 15.2	Allowed	Mild steel, natural rubber	Normal	33.1	

Class 8 CORROSIVE SUBSTANCES (Contd)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Chromic fluoride, solution	1757	II	-	-	3.8 (anhydrous)	-			See para. 15.2	Allowed. See para. 17.2.1	Mild steel, aluminium, natural rubber	Normal	33.1	
[Chromium oxychloride	1758	I	-	-	1.911	-			See para. 15.2	Not allowed	See para. 55.5	See para. 19.2.1	33.2]	[to be reviewed]
Cyclohexenyltrichlorosilane	1762	II			1.263 at 25°C	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry
Cyclohexyltrichlorosilane	1763	II			1.2	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry
Dichloroacetic acid	1764	II	0.02		1.5634	-			See para. 15.2	Allowed. See para. 17.2.1	Mild steel, certain stainless steels, aluminium	Normal	33.1	
Dichloroacetyl chloride	1765	II			1.53 at 16°C	-			See para. 15.2	Allowed. See para. 17.2.1	Mild steel, certain stainless steels, aluminium	Normal	33.1	Keep dry
Dichlorophenyltrichlorosilane	1766	II			1.56				See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry
Diethyldichlorosilane	1767	II			1.053 at 25°C				See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry
Difluorophosphoric acid, anhydrous	1768	II			1.583 at 25°C				See para. 15.2	Not allowed		Normal	33.1	Special lining
Diisooctyl acid phosphate	1902	III				-			See para. 15.2	Allowed	-	Normal	33.5	
Diphenyldichlorosilane	1769	II				-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry
Dodecyltrichlorosilane	1771	II			1.026 at 25°C	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry

Class 8 CORROSIVE SUBSTANCES (Contd)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Fluoboric acid	1775	II			1.84				See para. 15.2	Not allowed	Mild steel	Normal	33.1	5 mm lead lining
Fluorophosphoric acid, anhydrous	1776	II			1.18 at 25°C	-			See para. 15.2	Not allowed		Normal	33.1	Keep dry
Fluorosulphonic acid	1777	I			1.745 at 15°C	-			See para. 15.2	Not allowed		See para. 19.2.1	33.2	Keep dry
Fluosilicic acid	1778	II	-	-	1.46	-			See para. 15.2	Not allowed	All but compatible 300 series stainless steel and monel	Normal	33.1	
Formic acid	1779	II	1.598 at 40°C (Anhydrous acid)	3.669 at 60°C	1.22 at 20°C	-			See para. 15.2	Allowed. See para. 17.2.1	Mild steel	Normal	33.1	
Fumaryl chloride	1780	II	-	-	1.408 at 20°C	-			See para. 15.2	Allowed. See para. 17.2.1	Aluminium. See para. 55.5	Normal	33.1	Keep dry
Hexadecyltrichlorosilane	1781	II	-	-	0.996 at 25°C	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry
Hexafluorophosphoric acid	1782	II	-	-	1.81	-			See para. 15.2	Allowed. See para. 17.2.1	Mild steel	Normal	33.1	
Hexamethylenediamine solution	1783	II	70°F 100°F 115°F 130°F	0 psia 0.5 psia 0.79 psia 1.21 psia	Solid at 60°F .8854 at 110°F .85 at 115°F	6			See para. 15.2	Not allowed	[All but compatible 300 series stainless steel and monel]	See para. 19.2.1	33.2	[5 mm rubber lining or approved alternative]
Hexyltrichlorosilane	1784	II				-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry

CLASS 8 - CORROSIVE SUBSTANCES (continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Hydrazine, anhydrous and its aqueous solutions containing more than 64%, by weight of hydrazine	2029	I	1.04 at 120°F	2.35 at 150°F	1.004 at 25°C	6			See para. 15.1	Not allowed	(1) [Stainless steel with .5% MC] (2) Hastelloys (3) [4CE] aluminium (4) Monel (5) Mg (6) Zn (7) Pb (8) Cu and alloys (9) Fe	See para. 19.2.1.	33.2	Nitrogen blanket required, 2 kp/cm^2
Hydrazine hydrate and aqueous solutions of hydrazine containing not more than 64% by weight, of hydrazine	2030	II	2.75 at 25°C (50/50), 1.04 at 120°F		1.004 at 25°C	-			See para.15.2	Allowed. See para.17.2.1	Aluminium [ ] copper	See para.19.2.1	33.1	
Hydriodic acid	1787	II			1.7	-			See para.15.2	Allowed. See para.17.2.1	Mild steel	Normal	33.1	
Hydrobromic acid	1788	II	1.75 at 25°C (62% soln)		1.488 at 20°C 1.487 at 25/25°C (48% soln.) 1.723 at 25/25°C (62% soln.)	-			See para.15.2	Allowed	Mild steel	Normal	33.1	
Hydrochloric acid (assume 28-35%)	1789	II	0.164 (28%) at 40°C 1.64 (35%) at 40°C	0.665 (28%) at 50°C 7.74 (35%) at 50°C	1.19	-			See para.15.2	Not allowed		Normal	33.1	Rubber lining

CLASS 8 - CORROSIVE SUBSTANCES (continued)

1	2	3	4 4	5	6	7	8	9	10	11	12	13	14	15
Hydro-fluoric acid solution	1790	I	19.8	46.6	0.987				See para.15.2	Not allowed	Mild steel	See para.19.2.1	33.1	
Hypo-chlorite, solutions containing more than 5% available chlorine	1791	III	-	-	-	-			See para.15.2	Allowed		Normal	33.1	Special lining required in some cases
Iodine monc-chloride	1792	II	-	-	(alpha) 3.18 at 0°C (beta) 3.24 at 34°C				See para. 15.2	Allowed See para.17.2.1	See para.55.5	Normal	33.2	Keep dry
Isopropyl acid phosphate	1793	III	-	-	-	-			See para.15.2	Allowed		Normal	33.1	
Nitric acid	2031	I	4.06 at 122°F	-	1.504 at 25°C				See para.15.2	Not allowed		See para.19.2.1	33.2	See para.55
Nitric acid, red fuming	2032	I	5.0 at 100°F	-	1.4 at 20°C	5.1			See para.15.1	Not allowed		See para.19.2.1	33.2	See para.55

CLASS 8 - CORROSIVE SUBSTANCES (continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Nonyltrichlorosilane	1799	II	-	-	-	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry
Octadecyltrichlorosilane	1800	II	-	-	-	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry
Octyltrichlorosilane	1801	II	-	-	-	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	Keep dry
Perchloric acid not exceeding 50%, by weight, of acid	1802	II	-	-	1.764	-			See para. 15.2	Allowed. See para. 17.2.1		Normal	33.1	See para. 55
Phenolsulphonic acid, liquid	1803	II	-	-	1.345-1.365 (for 65% soln) at 15.5°C	-			See para. 15.2	Allowed. See para. 17.2.1	See para. 55.5	Normal	33.1	
Phenyltrichlorosilane	1804	II	-	-	1.321 at 25°C	-			See para. 15.2	Allowed. See para. 17.2.1	Mild steel. See para. 55.5	Normal	33.1	Keep dry
Phosphoric acid	1805	III	0.145 (85%) 0.58 (65%)	0.464 (85%) 1.818 (65%)	1.834 at 18°C	-			See para. 15.2	Allowed		Normal	33.1	
Phosphorus oxybromide	1939	II	-	-	2.82	-			See para. 15.2	Allowed. See para. 17.2.1	Mild steel. See para. 55.5	Normal	33.1	Keep dry

CLASS 8 - CORROSIVE SUBSTANCES (continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Phosphorus tribromide	1808	II	-	-	2.852	-			See para. 15.2	Allowed See para.17.2.1	See para. 55.5	Normal	33.1	Keep dry
Phosphorus trichloride	1809	II	-	-	1.574 at 20°C	-			See para. 15.2	Allowed See para.17.2.1	Most common metals except Ni & Pb	See para. 19.2.1	33.1	Keep dry
Phosphoryl chloride	1810	II	-	-	1.574	-			See para. 15.2	Allowed See para.17.2.1	See para. 55.5	Normal	33.1	Keep dry
Potassium bifluoride solution	1811	II	-	-	2.37	-			See para. 15.2	Allowed See para.17.2.1	Siliceous materials	Normal	33.1	
Potassium hydroxide solution	1814	II	nil	nil	2.044	-			See para. 15.2	Allowed See para.17.2.1	Aluminium zinc, tin	Normal	33.1	
Propionic acid	1848	III	0.2 at 104°F	0.57 at 140°F	0.9942	-			See para. 15.2	Allowed	Lead	Normal	33.1	
Propionyl chloride	1815	II	-	-	1.065 at 20°C	3			See para. 15.2	Allowed See para.17.2.1	See para. 55.5	Normal	33.1	Keep dry
Propyltri-chlorosilane	1816	II	-	-	1.195 at 25°C	-			See para. 15.2	Allowed See para.17.2.1	See para. 55.5	Normal	33.1	Keep dry
Pyrosulphuryl chloride	1817	II	-	-	1.819				See para. 15.2	Not allowed	See para. 55.5	Normal	33.1	Keep dry
Silicon tetra-chloride	1818	II	-	-	1.483 at 20°C				See para. 15.2	Not allowed	See para. 55.5	See para. 19.2.1	33.2	Nitrogen blanket required. Keep dry
[Sludge acid	1906	II	-	-					See para. 15.2	Not allowed	Mild steel	See para. 19.2.1	33.2]	[To be reviewed]

CLASS 8 - CORROSIVE SUBSTANCES (continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Sodium aluminate, solution	1819	II	-	-	-	-			See para. 15.2	Allowed. See para.17.2.1	Aluminium, zinc, tin	Normal	33.1	
Sodium chlorite, solution containing more than 5% available chlorine	1908	II	-	-	-	-			See para. 15.2	Allowed. See para.17.2.1.		Normal	33.1	
Sodium hydrogen sulphite in solution	1909	II	-	-	1.48	-			See para. 15.2	Allowed See para.17.2.1	Mild steel	Normal	33.1	
Sodium hydroxide solution	1824	II	-	-		-			See para. 15.2	Allowed	Aluminium, zinc, tin	Normal	33.1	Stress corrosion cracking may occur
Stannic chloride, anhydrous	1827	II			2.2788	-			See para. 15.2	Allowed. See para.17.2.1	See para.55.5	Normal	33.1	Keep dry
Sulphur chloride	1828	II	6.813mm at 20°C		1.69	-			See para. 15.2	Allowed. See para.17.2.1	See para.55.5	Normal	33.1	Keep dry
Suphur trioxide, inhibited	1829	I	(a)-1.412 (b)-6.654 (c)-8.375 all at 25°C	(a)-12.74 (b)-18.375 (c)-18.375 all at 50°C	(a)-1.97 (b)- (c)-2.29	-			See para. 15.2	Not Allowed	See para.55.5, organic materials	See para. 19.2.1	33.2	Keep dry, external heating coils only
Sulphuric acid	1830	II			max. 1.84	-			See para. 15.2	Not Allowed	Mild steel for concentration of less than 85%, aluminium, zinc, copper		33.2	
Sulphuric acid, fuming	1831	I			1.8342 to 1.9820 at 60°F	-			See para. 15.1	Not Allowed	Aluminium, zinc, copper	See para. 19.2.1	33.2	Keep dry
[[Sulphuric acid, spent	1832	II	-	-	-	-			See para. 15.2	Not Allowed	Mild steel	See para. 19.2.1.	33.2]	[To be reviewed]

CLASS 8 - CORROSIVE SUBSTANCES (continued)

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Sulphurous acid	1833	II	-	-	1.03	-			See para. 15.2	Allowed. See para. 17.2.1	Mild steel	Normal	33.1	
Sulphuryl chloride	1834	I	-	-	1.69 at 15.5°C	-			See para. 15.2	Not allowed	See para.55.5	See para. 19.2.1	33.2	Keep dry
Tetramethylammonium hydroxide, solution	1835		-	-		-			See para. 15.2	Allowed. See para. 17.2.1	Copper	Normal	33.1	
Thioglycolic acid	1940	II	-	-	1.325	-			See para. 15.2	Allowed. See para. 17.2.1	Mild steel	Normal	33.1	
Thionyl chloride	1836	I	4.280 at 40°C 6.220 at 50°C	8.861 at 60°C	1.638	-			See para. 15.2	Not allowed	See para.55.5	See para. 19.2.1	33.2	Keep dry
Thiophosphoryl chloride	1837	II	-	-	1.635				See para. 15.2	Not allowed	See para.55.5	See para. 19.2.1	33.1	Keep dry
Titanium tetrachloride	1838	II	-	14.7 psia at 136.4°C	1.7609 at 0°C				See para. 15.2	Not allowed	See para.55.5	See para. 19.2.1	33.2	Keep dry
Trichloroacetic acid, solution	2564	II	-	-	1.6298				See para. 15.2	Allowed. See para. 17.2.1	Mild steel, aluminium	Normal	33.1	
Zinc chloride, solution	1840	III	-	-	2.91				See para. 15.2	Allowed.	Copper and copper alloys, aluminium, zinc, mild steel	Normal	33.1	Special lining

Annex 6

TEXT OF THE RECOMMENDATIONS

(ST/ECA/81/Rev.2, as amended by ST/ECA/81/Rev.2/Amend 1 and E/CN.2/CONF.5/57, annex 5)

Addition adopted by the Group of Rapporteurs

Expand the third sentence of paragraph 28 of the Recommendations to read as follows:

> "Governments and intergovernmental organizations are invited to submit proposals for classification of new substances, and for their packing and mixed loading, where applicable."

Annex 7

HAZARD IDENTIFICATION SYSTEM

Report of the working group

The working group comprised the majority of Rapporteurs and representatives of the international organizations. General discussion took place and several rapporteurs wished particular points to be recorded for future reference in addition to those contained in annex 5 to document E/CN.2/CONF.5/55 and in document E/CN.2/CONF.5/R.456. These points were:

1. That particular emphasis be given to compatibility with the IMCO proposals;

2. That there might be a legitimate need for interpretative reference material to differ as between national and modal authorities (cf. E/CN.2/CONF.5/R.456, paragraph 2 (e));

3. That the HIS should at this stage be made applicable only to complete load (full truck load, full wagon load etc.) movements and to unitized loads of 3 tons or over;

4. That some modes of transport or countries might need or might be able to work at more sophisticated (more specific) levels than others;

5. That the United Nations number and label would be part of the over-all HIS (see annex 5 to document E/CN.2/CONF.5/55).

The working group next agreed that some effort should be made to determine what form of abbreviated hazard information code should be used in the over-all HIS. It was considered that the following four options were open:

1. an action-based code, or

2. a code based on properties, or

3. the specification of a code by national competent authorities, or

4. a combined dual recommendation of 1 and 2.

The participants in the working group were asked to indicate their preferences, and it became clear, following an examination of their statements, that there was a clear preference for option 4, which was reinforced if those whose first choice was eliminated had their second preference counted instead.

At this point the discussion turned to the question of how to differentiate between the two codes which would be displayed in the HIS panel. The problem was that both abbreviated codes could be entirely numerical 3-digit codes and hence not necessarily easily separated from each other. Some possibilities were explored with respect to alphanumeric designations and the possibility of a 2-digit system for one or the other of the codes. Some consideration was also given to the possible shape of the panels and the placement of the various codes and serial numbers upon it. It was agreed that Rapporteurs might be invited to submit definitive proposals on this question for the March meeting.

The structure of the chapter of the Recommendations was also discussed and a similar invitation was extended to Rapporteurs to propose drafts of the text of the chapter which would indicate the various components of HIS and their interrelationships.

The working group also tackled the problem that the individual action/property abbreviated codes would need to be developed and refined for Rapporteur approval. Rapporteurs were asked to make suggestions in writing by 15 November 1975 to the Rapporteurs from France and the United Kingdom, respectively, for the properties- and action-based codes. These Rapporteurs agreed to undertake the collation of these comments and to present proposals for the March 1976 session.

In conclusion, the working group recognized that special efforts would be necessary at that time, in order to have a working draft of the entire HIS proposal ready for the Committee of Experts in December 1976.