



**Committee of Experts on the Transport of Dangerous Goods
and on the Globally Harmonized System of Classification
and Labelling of Chemicals****Sub-Committee of Experts on the Transport of Dangerous Goods****Forty-first session**

Geneva, 25 June – 4 July 2012

Item 9 of the provisional agenda

Guiding principles for the Model Regulations**Amendments to the Guiding Principles – Packagings****Transmitted by the Expert from the United Kingdom¹****Introduction**

1. The expert from the United Kingdom believes that the Guiding Principles is a living document and produced ST/SG/AC.10/C.3/2011/6 for the 39th session of the Sub-Committee and informal document INF.14 at the 40th session to update the provisions concerning Part 4 (Section 4.1). Following discussions at the 40th session the expert from the United Kingdom agreed to make a number of minor amendments to the proposal and the following proposal takes account of those discussions.

2. Also during the last session of the Sub-Committee the comment was made that some guiding principles should be developed to address the use of packagings design type tested for liquids being used to transport solids. However, the expert from the United Kingdom believes that this is a fundamental issue requiring text to be adopted in section 4.1.1 from which text on guiding principles can be addressed thereafter. It is not in the scope of this paper to propose such text for section 4.1.1.

¹ In accordance with the programme of work of the Sub-Committee for 2011-2012 approved by the Committee at its fifth session (refer to ST/SG/AC.10/C.3/76, para. 116 and ST/SG/AC.10/38, para. 16).

Proposal

3. It is proposed to adopt the following text into the Guiding Principles:

"Part 4

Packing and tank provisions

4.1 Basic principles for developing packing instructions for the Model Regulations

General provisions

1. Packing Instructions should be clear and provide as wide a choice of packagings as possible.
2. The Packing Instructions consist of a small number of general instructions supplemented by a limited number of more specific instructions for particularly hazardous or specialized dangerous goods.
3. Packing Instructions should be developed with the objective of being suitable for multimodal transport. More severe packaging restrictions, in some instances, may be necessary for air transport.
4. A rationalized approach (based on similar properties or hazards presented) should be used for allocating packing instructions to specific substances.
5. The Packing Instructions are primarily intended for the person preparing the package for consignment. They should not address classification or operational provisions.

The Packing Instruction Structure

6. There are Packing Instructions for:
 - Packagings, prefixed by "P". Included are:
 - Packagings in accordance with Chapter 6.1 (up to 450 l and/or 400 kg net, as appropriate).
 - Pressure receptacles in accordance with Chapter 6.2.
 - Packagings for Division 6.2 substances in accordance with Chapter 6.3.
 - Packagings or packing methods not subject to the provisions of Chapters 6.1, 6.2, 6.3, 6.5 or 6.6.
 - IBCs, prefixed by "IBC", up to 3 m³ (intermediate bulk containers in accordance with Chapter 6.5);
 - Large packagings, prefixed by "LP", exceeding 400 kg net or 450 L (large packagings in accordance with Chapter 6.6).
7. The majority of substances and articles, excluding Classes 1, 2 and 7, have been allocated to a packing instruction beginning "P00*". When considering new Packing Instructions the use of one of these numbers should be considered first; class specific packing instructions should only be used when there is need for restricted packaging

options or extensive special conditions. The exception to this rule is P004 to which fuel cell cartridges containing dangerous goods of different Classes are assigned.

8. Where the "P00*" instructions cannot be used then there are series of class specific packing instructions all beginning with the class number. In some cases it will be necessary to indicate in the Packing Instruction that in addition to the permitted design types packages and any quantity thresholds that are specified, there are some 'Additional Requirements' that apply for all substances or articles assigned to that Packing Instruction. An example is the requirement to protect cells and batteries against short circuit as may be found in Packing Instruction P801 or P903. Some Packing Instructions may need to include provisions which are relevant only for a small number of substances or articles among many others that are assigned to a particular Packing Instruction. These are referred to as Special Packing Provisions and because these are indicated in Column 9 of the Dangerous Goods List they are individually numbered as PPxx. An example is PP28 which is specific to Perchloric Acid in Packing Instruction P502. Some, such as PP26 which requires packagings to be lead free, will appear in more than one Packing Instruction with the same number since the requirement is the same but the UN numbers to which it applies are different.

9. Where a solid or liquid substance can only be transported in a cylinder then allocation to Table 3 of P200 shall be considered.

Packagings "P"

Some general principles of assignment of substances to Packing Instructions and examples of exceptions are given below:

Class 1 P100s

10. Given the intrinsic properties of explosive substances and articles and the variable effects that they display depending on the manner in which they are packaged, the classification process addresses issues of possible over-confinement, for example in metal packagings. Such packagings are often chosen for their robustness in handling rather than their appropriateness in transport.

11. However, given the desirability of uniformity in assessing packaging in relation to the classification process (as set out in the Manual of Tests and Criteria) it has been decided that packagings used to transport explosive substances and articles should meet the Packing Group II test performance level.

12. Similar principles apply to the assignment of packaging for organic peroxides and self-reactive substances.

Class 2 P200s

13. For gases, except some small articles containing gas such as UN2037 or UN3150 which are allocated to P003.

Class 3 P300s

14. Flammable liquids with explosive properties are assigned to P300 (UN 3064). Substances that form part of chemical kits are assigned to P302.

Class 4 P400s

15. Many substances of this class have been allocated to special P400 Packing Instructions.

16. Self reactive substances in Division 4.1 are packaged in the same way as organic peroxides and are allocated to P520. This Packing Instruction contains packing method

codes OP1 to OP8 which refer to the packing methods for the various types of organic peroxides/self reactive substances.

Class 5 P500s

17. Chemical oxygen generators only are assigned to P500 and stabilized hydrogen peroxide only is assigned to P501.

18. Substances of Division 5.2 are assigned to P520. This Packing Instruction contains packing method codes OP1 to OP8 which refer to the packing methods for the various types of organic peroxides/self reactive substances.

Division 6.1 P600s

19. Toxic ammunition and tear gas candles are assigned to P600.

Division 6.2 P600s

20. Infectious substances are assigned to P620, P621 or P650.

Class 7

21. No packing instructions have yet been allocated to radioactive materials as the packaging requirements have been set by IAEA and do not align easily to the system for the other classes. Instead radioactive material is assigned to special UN numbers which depend on a number of characteristics including packaging such as the activity level of radionuclides in the package, or the fissile or non fissile properties.

Class 8

22. There are a number of specific Packing Instructions for Class 8 substances and articles.

Class 9

23. Substances and articles of this Class each have a hazard not covered by other Classes. When any substance or article is assigned to this Class its unique properties will need to be considered in developing or assigning a Packing Instruction.

The following should form the template for any new Packing Instruction (PXXX) for Classes/Divisions 3, 4, 5.1, 6, 8 or 9.

PXXX PACKING INSTRUCTION		PXXX
<i>For specific UN number(s) ONLY:</i>		
This instruction applies to UNXXXX..... <i>(E.g. see P301)</i>		
The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 are met: <i>Sometimes additional paragraphs will need to be quoted or alternatives given e.g. P620</i>		
		Maximum net mass (see 4.1.3.3)
Combination packagings		
Inner packagings	Outer packagings	
<i>List permitted types</i>	Drums <i>List permitted types</i> Boxes <i>List permitted types</i> Jerricans <i>List permitted types</i>	
		Maximum capacity (see 4.1.3.3)
Single packagings		
Drums <i>List permitted types</i> Jerricans <i>List permitted types</i> Boxes <i>List permitted types</i> Bags <i>List permitted types</i>		
Composite packagings <i>List permitted types</i>		
Pressure receptacles , provided the general provisions of 4.1.3.6 are met <i>If 4.1.3.6 is not sufficient then the use of cylinders should be addressed in detail. E.g.P602(4)</i>		
Additional requirements <i>This section should contain additional packaging information which should be applicable to ALL the packaging choices listed above</i>		
Special packing provision PPXX For UNxxxx..... <i>These should address specific requirements for individual or groups of substances. The provision should only address packaging issues and not classification or operational provisions.</i>		