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**COMMITTEE OF EXPERTS ON THE
TRANSPORT OF DANGEROUS GOODS**

**Sub-Committee of Experts on the
Transport of Dangerous Goods**
(Fifteenth Session,
Geneva, 29 June - 10 July, 1998,
agenda item 3(a))

PACKAGINGS AND IBCs

Packing instructions and special provisions

**Transmitted by the experts from the United Kingdom
and the United States of America**

Background

1. During its fourteenth session, the Sub-Committee considered a paper prepared jointly by the experts from the United Kingdom and the United States of America (ST/SG/AC.10/C.3/1997/52 (UK/USA). Paragraphs 29 to 73 of the report of the fourteenth session summarize the relevant discussions. The paper was also discussed by the International Maritime Organization's Dangerous Goods, Solid Cargoes and Containers (DSC) Sub-Committee and Editorial and Technical (E&T) Group which met from 9-13 and 16-20 February 1998 respectively. During 2-4 March 1998 a working group organized by the Government of Canada also considered the paper and reached a number of agreements. On the basis of these discussions, and subsequent comments provided to the experts from the United States and United Kingdom, the paper was revised and is submitted for consideration at the fifteenth session of the Sub-Committee. This paper addresses packing instructions and special packaging provisions. Packing instructions and special provisions for IBCs are addressed in ST/SG/AC.10/C.3/1998/21.

2. The proposed packing instructions and special provisions are provided in Annexes 1 and 2. ST/SG/AC.10/C.3/1998/22 addresses assignment of the proposed packing instructions and special packing provisions to specific substances.

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Discussion of Revisions

3. The proposed requirements in 4.1.3 and the packing instructions were revised to take into account agreements reached by the informal working group. Revisions include:

- (a) In 4.1.3 text was added clarifying the meaning for net mass and maximum capacity as these terms relate to single and combination packagings;
- (b) 4.1.3 and P003 were revised to include provisions for use of “Large packagings”. There was an amendment made from the draft presented to the Ottawa Working Group in that packing group I, II and III substances assigned to P001 and P002 and which are contained in inner packagings, would be permitted in large packagings. In addition, large packagings would be permitted when they are specifically identified in a particular packing instruction (e.g. in P621 for clinical wastes) or when P003 is specified;
- (c) The term single packaging is used in this proposal, however, the Model Regulations do not include a definition for single packagings. The ICAO TI includes a definition for single packagings. Consistent with the ICAO definition, the following definition is proposed for inclusion in 1.2.1:

Single packagings are packagings that do not require inner packagings to perform their containment function during transport. The term includes composite packagings but does not include packagings used to contain articles;

- (d) Based on a compromise agreement, P001 and P002 only include quantity limitations more stringent than those specified in the packaging specifications of 6.1.4 for packagings intended for the transport of packing group I substances. These limitations are generally aligned with those agreed to by IMO for incorporation in Amendment 29 of the IMDG Code, although for some packagings the authorized maximum quantities per packaging have been increased based on decisions taken by the Ottawa working group;
- (e) Provisions for removable head drums for packing group I liquids are not currently included in P001. Use of removable head drums for packing group I viscous liquids will be addressed in a separate paper (-C.3/1998/23). Based on the Sub-Committee decision at the 14th session fibre drums were removed as acceptable single packagings for liquids;
- (f) P002 and P409 were revised to identify packagings not suitable for substances which may become liquid in transport;
- (g) The Sub-Committee should consider if special packing provisions indicating that venting is necessary for certain substances (i.e. UN 1378, 2014, 2015 or 2984). The experts from the UK and US believe that special packing provisions need not address this since the general requirements in 4.1.1.8 is sufficient;
- (h) In P002 several additional low hazard substances are authorized for transport in 5M1, 5H1 and 5L1 bags (see special packing provision 15);
- (i) In P002 a note was added in the single packagings column to indicate that boxes shall not be used as single packagings unless fitted with a liner. This is consistent with ADR/RID;

- (j) In P002, two special packing provisions which related to precluding the transport of certain Class 4 substances in bags were deleted since these substances were assigned to packing instruction P409 which excludes bags;
- (k) Wood barrels were removed as acceptable packagings from the general listing of authorized packagings. Wood barrels will only be authorized for alcoholic beverages and ethyl alcohol;
- (l) A note was added to 4.1.3.8 to indicate that porcelain, stoneware and earthenware inner packagings are authorized whenever glass packagings are permitted;
- (m) In P001 and P002 the inner packaging limitations based on those currently proposed for the IMDG Code were adopted. These are slightly less restrictive than those currently in the ADR/RID but are more restrictive than those in North American and Australian regulations;
- (n) This paper includes reference to the use of N type (metal other than steel or aluminium) packagings. A proposal for N type packagings is addressed in a separate submission (ST/SG/AC.10/C.3/1998/1);
- (o) P200 was simplified. In the future, more specific requirements for gas cylinders and receptacles should be considered. P200 was amended to incorporate a provision, which appears in PI 200 of the ICAO Technical Instructions, recognizes that "small" cylinders and receptacles (e.g., small carbon dioxide receptacles) must be placed in boxes or other outer packagings to provide the necessary protection and securing in transport, and to permit their marking, labeling and handling in a unit as a "package";
- (p) Provisions to allow liquids and solids in compressed cylinders approved by the competent authority (see 4.1.3.5) were not amended because only a few of the substances assigned to P001 (i.e. UN 1204) and P002 (i.e. UN 1204, 2002, 2006) were considered to pose hazards due to over confinement. These have been assigned to special packing provisions P5 and P10 to indicate that gas cylinder and receptacles are not authorized for these substances;
- (q) Some of the packing instructions developed for class 9 were eliminated and the applicable substances were assigned to P002 or P003 as appropriate (i.e. old P901 for dry ice changed to P003, P24 and old P903 for polymeric beads changed to P002, P18);
- (r) The Sub-Committee decided not to designate packing groups for articles in the Dangerous Goods List, but to include the packing group relevant to the packaging test performance level, if necessary, in the packing instruction or special packing provision. This decision was taken into account in this proposal;
- (s) Except for the explosives packing instructions, existing packing instructions (i.e. 520, 620) were editorially revised for consistency and were incorporated into the proposal.

4. Some of the issues raised in ST/SG/AC.10/C.3/1997/52 have not been brought forward in this paper. The issues concerning:
- Use of removable head drum for packing group I liquids;
 - Definitions for hermetically sealed packagings;
 - Definitions for sift proof and water resistant packagings; and
 - Pressure limitations and relief device settings for IBCs

should be addressed in separate proposals if deemed necessary.

5. The special packaging provisions (SPPs) initially proposed in -C.3/1997/52 have not been significantly revised. Some editorial amendments were made to coincide with the renumbering of packing instructions. In Annex 2, the special provisions currently provided in Chapter 3.3 which deal with packaging requirements have been identified. All of the special provisions have been aligned with the Sub-Committee's guiding principles. Consistent with the format of the packing instructions currently in the Tenth Revised Edition of the Recommendations, most of the packaging requirements in the special provisions have been extracted and are proposed to be incorporated as special packing provisions in the applicable packing instructions. Based on a decision by the Ottawa Working Group, these special packing provisions have been sequentially numbered and are proposed for incorporation in column 9 as well as in the specific packing instructions.

6. The Ottawa Working Group could not reach consensus on how to address the assignment of packing instructions to solids which may become liquid during transport. One approach considered was consistent with the current requirement in the Model Regulations which includes a general requirement to indicate that flexible, fibreboard and wooden IBCs can not be used for solids which may become liquid during transport. The other approach considered proposed that solids with a melting point less than 45⁰C should be specifically identified by a special provision and should not be allowed to be transported in certain packagings considered unsuitable for liquids. In the UK/US proposal the existing general requirement is expanded because the packagings considered unsuitable for liquids are specifically identified with a note in P002 (see Note 2) and in P409 (see Note 1). The experts from the UK and US favor the former approach for the following reasons:

- Because it is not practical in the Model Regulations to identify all of the solid substances which may become liquid during transport since the melting point of substances may vary depending on the purity and composition of a substance or mixture. This is particularly difficult for generic and n.o.s. entries;
- Because transport temperature conditions can exceed 45⁰C. The 45⁰ C limitation provides shippers with a false sense that they need not be concerned with solids which may become liquid during transport at temperatures greater than 45⁰C;
- Because the approach proposed in the UK/US paper puts the responsibility on the shipper to determine that he has the appropriate packaging and allows for more flexibility when transport conditions are known and journeys are short.

This latter point is also discussed relevant to IBC packing instructions in ST/SG/AC.10/C.3/1998/21.

Annex 1**PROPOSED PACKING INSTRUCTIONS****4.1.3 Packing instructions and special packing provisions**

- 4.1.3.1 This section is devoted to the packing instructions and special packing provisions applicable to dangerous goods in classes 1 to 9. The packing instructions and special packing provisions apply to packagings, large packagings and IBCs.
- 4.1.3.2 Column 8 of the dangerous goods list shows for each article or substance the packing instruction(s) that shall be used. When no packing instruction is indicated in column 8 then packagings or IBCs are not authorized unless specifically approved by the competent authority. Column 9 includes special packing provisions applicable to packagings and IBCs.
- 4.1.3.3 Each packing instruction shows, where applicable, the acceptable single and combination packagings. For combination packagings, the acceptable outer packagings, inner packagings and when applicable the maximum quantity permitted in each inner or outer packaging, are shown. Maximum net mass and maximum capacity are as defined in 1.2.1.
- 4.1.3.4 Where the packing instructions in this part authorize the use of a particular type of outer packaging in a combination packaging (e.g. 4G), packagings bearing the same packaging identification code followed by the letters “V”, “U” or “W” marked in accordance with the requirements of Part 6 (e.g. 4GV, 4GU or 4GW) may also be used under the same conditions and limitations applicable to the use of that type of outer packaging according to the relevant packing instructions. For example, a combination packaging marked with the packaging code “4GV” may be used whenever a combination packaging marked “4G” is authorized, provided the requirements in the relevant packing instruction regarding types of inner packagings and quantity limitations are respected.
- 4.1.3.5 Gas cylinders and receptacles approved by the competent authority are authorized for the transport of any liquid or solid substance assigned to packing instruction P001 or P002 unless otherwise indicated in the packing instruction or by a special provision in column 9 of the Dangerous Goods List. The capacity of gas cylinders shall not exceed 450 litres. The capacity for gas receptacles shall not exceed 1000 litres.
- 4.1.3.6 Large packagings (see Chapter 6.6) may be used for substances assigned to packing instruction P001 or P002 when they are packed in inner packagings. In addition, large packagings may be used when they are specifically identified in a particular packing instruction (e.g. in P003 or P621).

- 4.1.3.7 Packaging or IBCs not specifically authorized by the applicable packing instruction may not be used for the transport of a substance or article unless specifically approved by the competent authority and provided:
- (a) the alternative packaging complies with the general requirements of this Part;
 - (b) when the packing instruction indicated in the Dangerous Goods List so specifies, the alternative packaging shall meet the requirements of part 6;
 - (c) the competent authority determines that the alternative packaging provides at least the same level of safety as if the substance were packed in accordance with a method specified in the particular packing instruction indicated in the Dangerous Goods List; and
 - d) a copy of the competent authority approval accompanies each consignment or the transport document includes an indication that alternative packaging was approved by the competent authority.

Note: The Competent Authorities granting such approvals should take action to amend the Model Regulations to include the provisions covered by the approval as appropriate.

- 4.1.3.8 In the following packing instructions, the general packing provisions of 4.1.1 for packagings and 4.1.2 for IBCs shall be met. Unless otherwise specified, each packaging shall conform to the applicable requirements of Part 6. Where glass receptacles are referenced in the packing instructions porcelain, earthenware and stoneware packagings are also permitted.

P001		PACKING INSTRUCTION			P001
The following packagings are authorized:					
Combination packagings:					
Inner packagings		Outer packagings	Packing group (PG) Maximum capacity/Net mass (see 4.1.3.3.2)		
			PG I	PG II	PG III
Glass receptacles Plastics receptacles Metal receptacles	10 l	Drums: Steel: 1A2 Aluminium: 1B2 Other metal: 1N2 Plastics: 1H2 Plywood: 1D Fibre: 1G Boxes: Steel: 4A Aluminium: 4B Natural wood: 4C1, 4C2 Plywood: 4D Reconstituted wood: 4F Fibreboard: 4G Expanded plastics: 4H1 Solid plastics: 4H2 Jerricans: Steel: 3A2 Aluminium: 3B2 Plastics: 3H2			
	30 l		250 kg	400 kg	400 kg
	40 l		250 kg	400 kg	400 kg
			250 kg	400 kg	400 kg
			250 kg	400 kg	400 kg
			150 kg	400 kg	400 kg
			75 kg	400 kg	400 kg
			250 kg	400 kg	400 kg
			250 kg	400 kg	400 kg
			150 kg	400 kg	400 kg
			150 kg	400 kg	400 kg
			75 kg	400 kg	400 kg
			75 kg	400 kg	400 kg
			60 kg	60 kg	60 kg
			150 kg	400 kg	400 kg
			120 kg	120 kg	120 kg
			120 kg	120 kg	120 kg
			120 kg	120 kg	120 kg

Single packagings:			
Drums			
Steel non-removable head: 1A1	250 l	450 l	450 l
Steel removable head: 1A2	Not allowed	[250/450 l]	[250/450 l]
Aluminium non-removable head: 1B1	250 l	450 l	450 l
Aluminium removable head: 1B2	Not allowed	[250/450 l]	[250/450 l]
[Other metal non-removable head: 1N]	250 l	450 l	450 l
[Other metal removable head: 1N2]	Not allowed	[250/450 l]	[250/450 l]
Plastics non-removable head: 1H1	250 l ¹	450 l	450 l
Plastics removable head: 1H2	Not allowed	[250/450 l]	[250/450 l]
Jerricans			
Steel jerrican non-removable head: 3A1	60 l	60 l	60 l
Steel jerrican removable head: 3A2	Not allowed	60 l	60 l
Aluminium jerricans non-removable head: 3B1	60 l	60 l	60 l
Aluminium jerricans removable head: 3B2	Not allowed	60 l	60 l
Other metal non-removable head: 1N1	60 l	60 l	60 l
Other metal removable head: 1N2	Not allowed	60 l	60 l
Plastics jerricans non-removable head: 3H1	60 l ¹	60 l	60 l
Plastics jerrican removable head: 3H2:	Not allowed	60 l	60 l
Composite packagings			
Plastics receptacle in steel or aluminium drum: 6HA1, 6HB1	250 l	250 l	250 l
Plastics receptacle in fibre, plastics or plywood drum: 6HG1, 6HH1, 6HD1	120 l ¹	250 l	250 l
Plastics receptacle in steel or aluminium crate or box or Plastic receptacle in wood, plywood, fibreboard or solid plastics box: 6HA2, 6HB2, 6HC, 6HD2, 6HG2 or 6HH2	60 l ¹	60 l	60 l
Glass receptacle in steel, aluminium, fibre, plywood, solid plastics or expanded plastics drum: 6PA1, 6PB1, 6PG1, 6PD1, 6PH1 or 6PH2 or in a steel, aluminium, wood, fibreboard or plywood box: 6PA2, 6PB2, 6PC, 6PG2 or 6PD2	Not allowed	60 l	60 l
Special packing provisions:			
1. For UN 1133, 1210, 1263 and 1866 except for transport by the air mode, packaging tests are not necessary for substances of packing groups II and III in quantities of 5 litres or less per metal or plastics packaging when:			
(a) In palletized loads, a pallet box or unit load device, e.g. individual packagings placed or stacked and secured by strapping, shrink or stretch-wrapping or other suitable means to a pallet. For sea transport, the palletized loads, pallet boxes or unit load devices shall be firmly packed and secured in closed cargo transport units;			
(b) As an inner packaging of a combination packaging with a maximum net mass of 40 kg.			
2. For UN 3065 and 1170 woods barrels (2C1 and 2C2) may be used.			
3. For UN 1261, removable head single packagings are not allowed.			
4. For UN 1774, packagings shall meet the packing group II performance level.			
5. For UN 1204 and 3343 packagings shall be so constructed that explosion is not possible by reason of increased internal pressure. Gas cylinders and receptacles shall not be used for these substances.			

The special packing provisions were taken from the UN Recommendations, ADR/RID, and the IMDG Code.

¹ Some plastic packagings are prohibited by IMO for Class 3 packing group I. The experts from the UK and US propose that these packagings not be restricted for land transport. If necessary sea transport regulations could impose this additional restriction.

P002		PACKING INSTRUCTION			P002
The following packagings are authorized:					
Combination packagings:					
Inner packagings	Outer packagings	Packaging group (PG) Maximum net mass (see 4.1.3.3.2)			
		PG I	PG II	PG III	
Glass receptacles 10 kg Plastics receptacles 50 kg Metal receptacles 50 kg Paper ¹ 50 kg Fibre ¹ 50 kg Paper bags, sift proof ¹ 50 kg Plastic bags ¹ 50 kg Textile bags, sift proof ¹ 50 kg ¹ These packagings may not be used when the substances being transported may become liquid during transport.	Drums	400 kg	400 kg	400 kg	
	Steel: 1A2	400 kg	400 kg	400 kg	
	Aluminium: 1B2	400 kg	400 kg	400 kg	
	Other metal: 1N2	400 kg	400 kg	400 kg	
	Plastics: 1H2	400 kg	400 kg	400 kg	
	Plywood: 1D	400 kg	400 kg	400 kg	
	Fibre: 1G	400 kg	400 kg	400 kg	
	Boxes				
	Steel: 4A	400 kg	400 kg	400 kg	
	Aluminium: 4B	400 kg	400 kg	400 kg	
	Natural wood: 4C1	250 kg	400 kg	400 kg	
	Natural wood with sift proof walls: 4C2	250 kg	400 kg	400 kg	
	Plywood: 4D	250 kg	400 kg	400 kg	
	Reconstituted wood: 4F	125 kg	400 kg	400 kg	
	Fibreboard: 4G	125 kg	400 kg	400 kg	
	Expanded plastics: 4H1	60 kg	60 kg	60 kg	
	Solid plastics: 4H2	250 kg	400 kg	400 kg	
	Jerricans				
	Steel: 3A2	120 kg	120 kg	120 kg	
	Aluminium: 3B2	120 kg	120 kg	120 kg	
Plastics: 3H2	120 kg	120 kg	120 kg		

Single packagings:			
Drums			
Steel drum: 1A1 or 1A2 ²	400 kg	400 kg	400 kg
Aluminium drum: 1B1 or 1B2 ²	400 kg	400 kg	400 kg
[Metal drum other than steel, or aluminium: 1N1 or 1N2 ²]	400 kg	400 kg	400 kg
Plastics drum: 1H1 or 1H2 ²	400 kg	400 kg	400 kg
Fibre drum: 1G ¹	400 kg	400 kg	400 kg
Plywood drum: 1D ¹	400 kg	400 kg	400 kg
Jerricans			
Steel jerrican: 3A1 or 3A2 ²	120 kg	120 kg	120 kg
Aluminium: 3B1 or 3B2 ²	120 kg	120 kg	120 kg
Plastics jerrican: 3H1 or 3H2 ²	120 kg	120 kg	120 kg
Boxes			
Steel box 4A	Not allowed**	400 kg	400 kg
Aluminium box 4B	Not allowed**	400 kg	400 kg
Natural wood box: 4C1 ¹	Not allowed	400 kg	400 kg
Plywood box: 4D ¹	Not allowed	400 kg	400 kg
Reconstituted wood box: 4F ¹	Not allowed	400 kg	400 kg
Natural wood with sift proof walls: 4C2 ¹	400 kg	400 kg	400 kg
Fibreboard: 4G ¹	Not allowed	400 kg	400 kg
Solid plastics: 4H1	Not allowed	400 kg	400 kg
Expanded plastics: 4H2	Not allowed	60 kg	60 kg
Bags			
Bags: 5H3 ¹ , 5H4 ¹ , 5L3 ¹ , 5M2 ¹	Not allowed	50 kg	50 kg
Composite packagings			
Plastics receptacle in steel, aluminium, plywood, fibre or plastics drum: 6HA1, 6HB1, 6HG1 ¹ , 6HD1 ¹ , or 6HH1	400 kg	400 kg	400 kg
Plastics receptacle in steel or aluminium crate or box, wooden box, plywood box, fibreboard box or solid plastics box: 6HA2, 6HB2, 6HC, 6HD2 ¹ , 6HG2 ¹ or 6HH2	75 kg	75 kg	75 kg
Glass receptacle in steel, aluminium, plywood or fibre drum: 6PA1, 6PB1, 6PD1 ¹ or 6PG1 ¹ or in steel, aluminium, wood, plywood or fibreboard box: 6PA2, 6PB2, 6PC, 6PD2 ¹ , or 6PG2 ¹ or in solid or expanded plastics packaging: 6PH2 or 6PH1 ¹	75 kg	75 kg	75 kg
¹ These packagings shall not be used when the substances may become liquid during transport.			
² These packagings shall not be used for packing group I substances when the substances may become liquid during transport.			
Special packing provisions:			
9. For UN 2000, celluloid in sheets may also be transported unpacked on pallets, wrapped in plastic film and secured by appropriate means, such as steel bands, as full load in closed transport units. Each pallet shall not exceed 1000 kg gross mass.			
10. For UN 2002, 2006, and 3270 packagings shall be so constructed that explosion is not possible by reason of increased internal pressure. Gas cylinders and receptacles shall not be used for these substances.			
11. For UN 3175, 3243 and 3244 packagings shall be a design type that has passed a leakproofness test at the packing group II performance level.			
12. For UN 1485, 1495 and 3247 four ply paper bags with plastics inner bags which are shrink or stretch wrapped on to pallets and loaded in a closed freight container are authorized.			
13. For UN 1748, 2741, 2880 and 3212 packagings shall be fitted with venting devices.			
14. For UN 1309, 1362, 5H1, 5L1 and 5M1 bags are allowed if they are overpacked in plastic bags or are wrapped in shrink or stretch wrap on pallets.			
15. For UN 1350, 1361, 1759(packing group III only), 1823, 2213 and 3077, 5H1, 5L1 and 5M1 bags are allowed when transported in closed transport units.			
16. For articles of UN 2870, packaging shall meet the packing group I performance level.			
17. UN 1327 may be transported in bales.			
18. For UN 2211 and UN 3314 packagings are not required to meet the packaging tests of Chapter 6.1.			
19. For UN 1324 and 2623 packagings shall meet the packing group III performance level.			

P003	PACKING INSTRUCTION	P003
<p>Packagings need not conform with the requirements of Chapter 6.1. Outer packagings constructed of suitable material of adequate strength and design in relation to the packaging capacity and its intended use shall be used. Large packagings are authorized for substances assigned to this packing instruction.</p>		
<p>Special packing provisions:</p> <ol style="list-style-type: none"><li data-bbox="164 461 1027 488">20. For UN 2800 batteries shall be protected from short circuit within the packagings.<li data-bbox="164 488 1466 533">21. For UN 1044, 1057, 1950, 2037, 2857, 3150, and 3164 the packagings shall be designed and constructed to prevent movement of the articles and inadvertent discharge during normal conditions of transport.<li data-bbox="164 533 1406 560">23. For UN 1950 and 2037 packagings shall not exceed 50 kg net mass for fibreboard or 75 kg net mass for other packagings.<li data-bbox="164 560 1466 602">24. UN 1845 Carbon dioxide, solid (dry ice), shall be packed in packagings designed and constructed to permit the release of carbon dioxide gas to prevent a build-up of pressure that could rupture the packagings.		

SP 229 would be deleted and SP 201 would be amended (see Annex 2).

P052		PACKING INSTRUCTION								P052
<p>The packagings listed below are authorized for organic peroxides and self-reactive substances. The packing methods for organic peroxides and self-reactive substances are designated OP1 to OP8. The quantities specified for each packing method are the maximum quantities authorized per package. In addition to the requirements covered by this packing instruction, the special packing provisions of 4.1.5.1 shall be met. The following packagings are authorized:</p> <p>(a) Combination packagings with outer packagings comprising boxes (4A, 4B, 4C1, 4C2, 4D, 4F, 4G, 4H1 and 4H2), drums (1A2, 1B2, 1G, 1H2 and 1D) jerricans (3A2, 3B2 and 3H2)</p> <p>(b) Single packagings consisting of drums (1A1, 1A2, 1B1, 1B2, 1G, 1H1, 1H2, 1D) and jerricans (3A1, 3A2, 3B1, 3B2, 3H1 and 3H2)</p> <p>(c) Composite packagings with plastics inner receptacles (6HA1, 6HA2, 6HB1, 6HB2, 6HC, 6HD1, 6HD2, 6HG1, 6HG2, 6HH1, 6HH2)</p>										
Maximum quantity per packaging/package <u>1/</u> for packing methods OP1 to OP8										
Packing Method	OP1	OP2 <u>1/</u>	OP3	OP4 <u>1/</u>	OP5	OP6	OP7	OP8	Maximum Quantity	
Maximum mass (kg) for solids and for combination packagings (liquid and solid)	0.5	0.5/10	5	5/25	25	50	50	200 <u>2/</u>		
Maximum contents in litres for liquids <u>3/</u>	0.5	-	5	-	30	60	60	225 <u>4/</u>		
<p><u>1/</u> If two values are given, the first applies to the maximum net mass per inner packaging and the second to the maximum net mass of the complete package.</p> <p><u>2/</u> 60 kg for jerricans 100 kg for boxes.</p> <p><u>3/</u> Viscous liquids shall be treated as solids when they do not meet the criteria provided in the definition for "liquids" presented in 1.2.1.</p> <p><u>4/</u> 60 litres for jerricans.</p>										
<p>Additional Requirements:</p> <p>1. Metal packagings, including inner packagings of combination packagings and outer packagings of combination or composite packagings may only be used for packing methods OP7 and OP8;</p> <p>2. In combination packagings, glass receptacles may only be used as inner packagings with a maximum content of 0.5 kg or 0.5 litre.</p> <p>3. In combination packagings, cushioning materials shall not be readily combustible.</p> <p>4. The packaging of an organic peroxide or self-reactive substance required to bear an "EXPLOSIVE" subsidiary risk label (Model No. 01) shall also comply with the provisions given in 4.1.3.10 and 4.1.3.11.</p>										
<p>Special packing provisions:</p> <p>25. For certain self-reactive substances of types B or C, UN 3221, 3222, 3223, 3224, 3231, 3232, 3233 and 3234 a smaller packaging than that allowed by packing methods OP5 or OP6 respectively shall be used (see 4.1.5 and 2.4.2.3.2.4).</p> <p>26. UN 3231, 2-Bromo-2-nitropropane-1,3-diol, shall be packed in accordance with packing method OP6. During transport, it shall be protected from direct sunshine and stored (or kept) in a cool and well-ventilated place, away from all sources of heat.</p>										

P099		PACKING INSTRUCTION								P099
Only packagings which are approved by the competent authority may be used (see 4.1.3.7).										

P200	PACKING INSTRUCTION	P200
<p>Compressed gas cylinders and gas receptacles conforming to the construction, testing and filling requirements approved by the competent authority are authorized. Cylinders and receptacles with capacities of 1 litre or less shall be packed in outer packagings constructed of suitable material of adequate strength and design in relation to the packaging capacity and its intended use and secured or cushioned so as to prevent significant movement within the outer packaging during normal conditions of transport.</p>		
<p>Special packing provisions:</p> <p>27. For UN 1037, 1A1 steel drums with a capacity not more than 100 litres which meet the packing group I performance level requirements may also be used.</p> <p>28. For UN 1001 cylinders shall be filled with a homogenous monolithic porous mass and contain an adequate quantity of acetone or other equally suitable solvent.</p>		

P200 was amended to incorporate a provision, which appears in PI 200 of the ICAO Technical Instructions, recognizes that "small" cylinders and receptacles (e.g., small carbon dioxide receptacles) must be placed in boxes or other outer packagings to provide the necessary protection and securing in transport, and to permit their marking, labeling and handling in a unit as a "package".

P201	PACKING INSTRUCTION	P201
<p>Compressed gas cylinders and gas receptacles conforming to the construction, testing and filling requirements approved by the competent authority are authorized.</p> <p>For non-toxic gases, combination packagings with hermetically sealed inner packagings of glass or metal with a maximum capacity of 5 litres per package which meet the packing group III performance level.</p> <p>For toxic gases, combination packagings with hermetically sealed inner packagings of glass or metal with a maximum capacity of 1 litre per package which meet the packing group III performance level.</p>		

This packing instruction applies to gas samples, UN 3167, 3168 & 3169. SP 209 would be amended.

P202	PACKING INSTRUCTION	P202
<p>For UN3353, Air bag inflators or modules or seat belts pretensioners shall be packed in packagings conforming to the packing group III performance level. The packaging shall be designed and constructed to prevent movement of the articles and inadvertent discharge during normal conditions of transport. The pressure vessel shall be in accordance with the requirements for the gas(es) contained in the pressure vessel. Air bag inflators or modules or seat belts pretensioners may be carried unpackaged in dedicated handling devices, vehicles, containers or wagons when moved from where they are manufactured to an assembly plant.</p>		

This packing instruction applies to Air bag inflators, air bag modules or seat-belt pretensioners (UN 3353). SP 280 should be amended (see Annex 2).

P203 will be used for refrigerating machines containing flammable gas if adopted.

P300	PACKING INSTRUCTION	P300
<p>UN 3064, Nitroglycerine, solution in alcohol shall be packed in combination packagings consisting of inner metal cans of not more than 1 litre capacity each and outer wooden boxes (4C1, 4C2, 4D or 4F) containing not more than 5 litres of solution. Metal cans shall be completely surrounded with absorbent cushioning material. Wooden boxes shall be completely lined with suitable material impervious to water and nitroglycerine.</p>		

This packing instruction applies to UN 3064 and is consistent with UN SP 25, ADR, 49 CFR and the IMDG Code (see 018 in IMO packing instruction document). UN 1204 would be assigned to P001.

P301	PACKING INSTRUCTION	P301
<p>UN 3165, Aircraft Hydraulic Power Unit Fuel Tanks shall conform to the following:</p> <p>(a) An aluminium pressure vessel made from tubing and having welded heads. Primary containment of the fuel within this vessel shall consist of a welded aluminium bladder having a maximum internal volume of 46 litres. The outer vessel shall have a minimum design gauge pressure of 1,275 kPa and a minimum burst gauge pressure of 2,755 kPa. Each vessel shall be leak checked during manufacture and before shipment and shall be found leakproof. The complete inner unit shall be securely packed in non-combustible cushioning material, such as vermiculite, in a strong outer tightly closed metal packaging which will adequately protect all fittings. Maximum quantity of fuel per unit and package is 42 litres; or</p> <p>(b) An aluminium pressure vessel. Primary containment of the fuel within this vessel shall consist of a welded vapour tight fuel compartment with an elastomeric bladder having a maximum internal volume of 46 litres. The pressure vessel shall have a minimum design gauge pressure of 5,170 kPa. Each vessel shall be leak-checked during manufacture and before shipment and shall be securely packed in non-combustible cushioning material such as vermiculite, in a strong outer tightly closed metal packaging which will adequately protect all fittings. Maximum quantity of fuel per unit and package is 42 litres.</p>		

This packing instruction would apply to Aircraft Hydraulic Power Unit Fuel Tank, UN 3165. This is consistent with the packing provisions on page 3174-1 in the IMDG Code and ICAO PI 301.

P302	PACKING INSTRUCTION	P302
<p>UN 3269, Polyester resin kits shall be packed in combination packagings which meet the packing group II or III performance level according to the criteria for class 3, applied to the base material. The base material and the activator (organic peroxide) shall be each separately packed in inner packagings. The components may be placed in the same outer packaging provided they will not interact dangerously in the event of a leakage. The activator shall have a maximum quantity of 125 ml per inner packaging if liquid, and 500 grams per inner packaging if solid.</p>		

This packing instruction applies to UN 3269 and is consistent with the packaging provisions currently in SP 236. Sp 236 would be amended (see Annex 2).

P400	PACKING INSTRUCTION	P400
<p>The following packagings are authorized:</p> <p>(1) Steel gas cylinders having a minimum design pressure of 1000 kPa conforming to the construction, testing and filling requirements approved by the competent authority. Cylinder valves shall be protected with steel valve protection caps or collars or the cylinders shall be overpacked in strong wood, fibreboard or plastics boxes. Cylinders shall be secured to prevent movement in the box and shall be packaged and transported so that pressure relief devices remain in the vapour space of the cylinder during normal conditions of handling and transport. Filling shall not be greater than 90% of the capacity of the cylinder.</p> <p>(2) Boxes (4A, 4B, 4C1, 4C2, 4D, 4F or 4G) or drums (1A2, 1B2, [1N2], 1D or 1G) enclosing hermetically sealed metal cans with inner packagings of glass, earthenware or metal, with a capacity of not more than 1 litre each, having threaded closures with gaskets. Inner packagings shall be cushioned on all sides with dry, absorbent, non-combustible material in a quantity sufficient to absorb the entire contents. Inner packagings shall not be filled to more than 90% of their capacity. Outer packagings shall have a maximum net mass of 125 kg.</p> <p>(3) Steel, aluminium or metal drums (1A2, 1B2 or [1N2]) with a maximum net mass of 150 kg each with hermetically sealed inner metal cans not more than 4.0 litre capacity each, with threaded closures fitted with gaskets.</p> <p style="margin-left: 40px;">(a) Inner packagings shall be surrounded with non-combustible cushioning material; (b) Each layer of inner packagings shall be separated by a dividing partition in addition to cushioning material; (c) Inner packagings shall not be filled to more than 90% of their capacity.</p>		

This packing instruction applies to certain Division 4.2, packing group I liquids. This was revised to be more consistent with ADR Marginal 2433 and the IMDG Code (see 034 in IMO document).

P401	PACKING INSTRUCTION	P401
<p>The following packagings are authorized:</p> <p>(1) Steel gas cylinders having a minimum design pressure of 1000 kPa conforming to the construction, testing and filling requirements approved by the competent authority. Cylinder valves shall be protected with steel valve protection caps or collars or the cylinders shall be overpacked in strong wood, fibreboard or plastics boxes. Cylinders shall be secured to prevent movement in the box and shall be packaged and transported so that pressure relief devices remain in the vapour space of the cylinder during normal conditions of handling and transport. Filling shall not be greater than 90% of the capacity of the cylinder.</p>		
<p>(2) Combination packagings with water resistant inner packagings which have threaded closures surrounded in inert cushioning and absorbent material in a quantity sufficient to absorb the entire contents.</p>	<p><u>Inner receptacle</u></p> <p>1 l</p>	<p><u>Outer packaging</u></p> <p>30 kg maximum net mass</p>
<p>(3) Steel drums (1A1) with a maximum capacity of 250 litres.</p>		

This packing instruction applies to certain Division 4.3 packing group I liquids (specifically chlorosilanes; UN 1183, 1242, 1295, 2988). This was revised to be more consistent with ADR Marginal 2473 and the IMDG Code (see for instance page 4341 and 058 in IMO packing instruction document) except that inner packagings other than glass receptacles are authorized.

P402	PACKING INSTRUCTION	P402
<p>The following packagings are authorized:</p> <p>(1) Steel gas cylinders having a minimum design pressure of 1000 kPa conforming to the construction, testing and filling requirements approved by the competent authority. Cylinder valves shall be protected with steel valve protection caps or collars or the cylinders shall be overpacked in strong wood, fibreboard or plastics boxes. Cylinders shall be secured to prevent movement in the box and shall be packaged and transported so that pressure relief devices remain in the vapour space of the cylinder during normal conditions of handling and transport. Filling shall not be greater than 90% of the capacity of the cylinder.</p>		
<p>(2) Combination packagings with water resistant inner packagings which have threaded closures surrounded in inert cushioning and absorbent material in a quantity sufficient to absorb the entire contents.</p>	<p><u>Inner receptacle</u> 15 kg</p>	<p><u>Outer packaging</u> 125 kg maximum net mass</p>
<p>(3) Steel drums (1A1) with a maximum capacity of 250 litres.</p>		
<p>(4) Composite packagings consisting of plastics receptacle in a steel or aluminium drum (6HA1 or 6HB1) with a maximum capacity of 250 litres.</p>		

This packing instruction applies to certain Division 4.3 packing group I liquids other than chlorosilanes (specifically UN 1928, 3148, 3130, 3207) and some dual hazard packing group II liquids (i.e. UN 3184, 3187). This was revised to be more consistent with the IMDG Code (see for instance pages 4355-1, 4355-2 and 4366 see also 052, 053, 055, 056, 057, 059, 060, 061, 062 and 063 in the IMO packing instruction document). The IMO packing instructions for Division 4.3 packing group I liquids were combined and streamlined to form a single packing instruction.

P403		PACKING INSTRUCTION	P403
The following packagings are authorized:			
Combination packagings:			
Inner packagings: Glass 2 kg Plastic 15 kg Metal 20 kg	Drums		Maximum net mass
	Steel: 1A2		400 kg
	Aluminium: 1B2		400 kg
	Other metal: [1N2]		400 kg
	Plastics: 1H2		400 kg
	Plywood: 1D		400 kg
	Fibre: 1G		400 kg
	Boxes		
	Steel: 4A,		400 kg
	Aluminium: 4B		400 kg
	Natural wood: 4C1		250 kg
	Natural wood with sift proof walls: 4C2		250 kg
	Plywood: 4D		250 kg
	Reconstituted wood: 4F		125 kg
	Fibreboard: 4G		125 kg
Expanded plastics: 4H1		60 kg	
Solid plastics: 4H2		250 kg	
Jerricans			
Steel: 3A2		120 kg	
Aluminium: 3B2		120 kg	
Plastics: 3H2		120 kg	
Single packagings:			Maximum net mass
Drums:			
Steel drum: 1A1			250 kg
Aluminium drum: 1B1			250 kg
Metal drum other than steel, or aluminium: [1N1]			250 kg
Plastics drum: 1H1			250 kg
Jerricans:			
Steel: 3A1			120 kg
Aluminium: 3B1			120 kg
Plastics: 3H1			120 kg
Composite packagings			
Composite packagings consisting of plastics receptacle in steel or aluminium drums (6HA1 or 6HB1)			250 kg
Composite packagings consisting of plastics receptacle in fibre, plastics or plywood drums (6HG1, 6HH1 or 6HD1)			75 kg
Composite packagings consisting of plastics receptacle in steel, aluminium, wood, plywood, fibreboard or solid plastics boxes (6HA2, 6HB2, 6HC, 6HD2, 6HG2 or 6HH2).			75 kg
Special packing provision			
[For UN 1378 packagings shall be fitted with a venting device.]			

This packing instruction applies to certain Division 4.2 and 4.3 packing group I solids including phosphides and hydrides of Division 4.3 (i.e. UN 2441, 2546, 2545, 2881, 3200, 2846, 1383, 3203, 1854, 1855, 2004 and 2005) and some 4.2 and 4.3 dual hazard packing group II n.o.s. entries (i.e. UN 3133, 3131, 3132). This was revised to be more consistent with the IMDG Code (see for instance page 4350 see also 035, 042 and 043 in the IMO packing instruction document). The ADR and 49 CFR are less restrictive for these substances than the IMDG Code. The special packing provision is provided in strikethrough because several working group members expressed concern that the venting device could allow the wetting solution to escape causing an even more dangerous situation than over-pressure. Several working group members pointed out that the general requirement for venting in 4.1.1.8 was sufficient. The Sub-Committee should consider this issue.

P404	PACKING INSTRUCTION	P404
<p>The following packagings are authorized:</p> <p>(1) When placed in water:</p> <p style="padding-left: 40px;">(a) Wooden boxes (4C1, 4C2, 4D, or 4F) with a maximum net mass of 75 kg:</p> <p style="padding-left: 80px;">(i) inner hermetically sealed metal cans, with a maximum net mass of 15kg; or</p> <p style="padding-left: 80px;">(ii) glass inner packagings cushioned on all sides with dry, absorbent, non-combustible material in a quantity sufficient to absorb the entire contents with a maximum net mass of 2 kg; or</p> <p style="padding-left: 40px;">(b) Drums (1A1, 1A2, 1B1, 1B2, 1N1 or 1N2) or jerricans (3A1 or 3B1) with a maximum net mass of 400 kg. These packagings shall be capable of passing the leakproofness test specified in 6.1.5.4 at the packing group II performance level.</p> <p>(2) When dry, it shall be fused and transported in packagings as follows:</p> <p style="padding-left: 40px;">(a) Drums (1A2, 1B2 or 1N2) with a maximum net mass of 400 kg; or</p> <p style="padding-left: 40px;">(b) In projectiles or hard cased articles when transported without Class 1 components as specified by the competent authority.</p>		

This packing instruction applies to white and yellow phosphorus (UN 1381). This was revised to be more consistent with the IMDG Code (see page 4250 and 045 in the IMO packing instruction document) and the ADR (see marginal 2435(3)).

P405	PACKING INSTRUCTION	P405
<p>Packagings shall be designed and constructed to prevent the loss of water or alcohol content or the content of the phlegmatizer. Metal packagings shall be so constructed and closed so as to avoid an explosive over pressure or pressure build-up of more than 300 kPa (3 bar). The following packagings are authorized:</p> <p>(1) Combination packagings with outer packagings consisting of wooden boxes (4C1, 4C2, 4D, or 4F), fibreboard boxes (4G), plastic boxes (4H1 or 4H2), fibreboard or plywood drums (1G, 1D), open head plastic drums or jerricans (1H2 or 3H2) with water resistant inner packagings.</p> <p>(2) In plastic, plywood or fibreboard drums or boxes with a water resistant inner bag, plastics film lining or water resistant coating.</p> <p>(3) In metal drums (1A1, 1A2, 1B1, 1B2, [1N1 or 1N2]), plastics drums (1H1 or 1H2), metal jerricans (3A1, 3A2, 3B1 or 3B2, plastics jerricans (3H1 or 3H2), plastics receptacle in steel or aluminium drums (6HA1 or 6HB1), plastics receptacle in fibre, plastics or plywood drums (6HG1, 6HH1 or 6HD1), plastics receptacle in steel, aluminium, wood, plywood, fibreboard or solid plastics boxes (6HA2, 6HB2, 6HC, 6HD2, 6HG2 or 6HH2).</p>		
<p>Special packing provisions:</p> <p>31. UN 1344, 1354, 1355, 1356 and 2852 shall not be transported in quantities of more than 500 grams per package.</p> <p>32. UN 1347 shall not be transported in quantities of more than 15 kg per package.</p> <p>33. For UN 1310, 1320, 1321, 1322, 1344, 1347, 1348, 1349 and 3317 packagings shall be lead free.</p>		

This packing instruction applies to desensitized explosives and nitrocellulose. This was revised to be more consistent with the IMDG Code (see table 1 in the introduction to Class 4.1 and 005 in the IMO packing instruction document) and ADR (see Marginal 2404). The quantity limits proposed are less stringent than those in IMO but are consistent with those in ADR/RID.

P406	PACKING INSTRUCTION	P406
<p>UN 1331, 1944, 1945 and 2254, Matches shall be tightly packed in combination packagings comprising securely closed inner packagings to prevent accidental ignition under normal conditions of transport. Inner packagings shall not contain more than 700 strike-anywhere matches. The maximum net mass of the outer packagings shall not exceed 45 kg except of fibreboard boxes which shall not exceed 30 kg. UN 1331, Strike-anywhere matches shall not be packed in the same outer packaging with any other dangerous goods other than safety matches or wax Vesta matches, which shall be packed in separate inner packagings.</p>		

This packing instruction would apply to Matches, UN1331 UN1944 UN1945 UN2254. A new packaging special provision would be incorporated providing definitions for matches (see Annex 2). See ADR Marginal 2407 and IMDG Code Pages 4154, 4156 and 49 CFR 173.186.

P407	PACKING INSTRUCTION	P407
<p>UN 3292, Sodium batteries shall be protected against short circuit and shall be isolated in such a manner as to prevent short circuits. Batteries shall be packed as follows:</p> <p>Cells shall be placed within outer packagings with sufficient cushioning material to prevent contact between cells and between cells and the internal surfaces of the outer packaging and to ensure that no dangerous movement of the cells within the outer packaging occurs in transport. Packagings which conform to the packing group II performance level shall be used.</p> <p>In addition batteries may be carried unpacked or in protective enclosures (e.g. in fully enclosed or wooden slatted crates). The terminals shall not in any case support the weight of any other superimposed elements.</p>		

This packing instruction applies to Sodium Batteries, UN 3292. SP 239 would be amended (see Annex 2). See also ADR Marginal 2473(5) and IMO 054, page 4332-1.

P408	PACKING INSTRUCTION	P408
<p>Packaging shall be a fibre box or drum which may be fitted with a liner or coating, the maximum contents of which shall not exceed 50 kg. Provided an equivalent level of safety is provided, other packagings may be approved by the competent authority.</p>		

This packing instruction applies to UN 2956 (Musk xylene) and 3251 (Isosorbide-5-mononitrate). It is based on the current SP 132. See also ADR Marginal IMO 007-Table 5 in the Introduction to Class 4.

P409	PACKING INSTRUCTION	P409	
The following packagings are authorized:			
Combination packagings:			
Inner packagings	Outer packagings	Packing group (PG) Maximum net mass	
		PG II	PG III
Glass receptacles 10 kg Plastics receptacles 30 kg Metal receptacles 40 kg Bags [10 kg]	Drums		
	Steel: 1A2	400 kg	400 kg
	Aluminium: 1B2	400 kg	400 kg
	Other metal: 1N2	400 kg	400 kg
	Plastics: 1H2	400 kg	400 kg
	Plywood: 1D	400 kg	400 kg
	Fibre: IG ¹	400 kg	400 kg
	Boxes		
	Steel: 4A	400 kg	400 kg
	Aluminium: 4B	400 kg	400 kg
	Natural wood: 4C1	400 kg	400 kg
	Natural wood with sift proof walls: 4C2	400 kg	400 kg
	Plywood: 4D	400 kg	400 kg
	Reconstituted wood: 4F	400 kg	400 kg
	Fibreboard: 4G ¹	400 kg	400 kg
	Expanded plastics: 4H1	60 kg	60 kg
	Solid plastics: 4H2	400 kg	400 kg
	Jerricans		
	Steel: 3A2	120 kg	120 kg
	Aluminium: 3B2	120 kg	120 kg
Plastics: 3H2	120 kg	120 kg	

Single packagings:		
Steel drum: 1A1 or 1A2	400 kg	400 kg
Aluminium drum: 1B1 or 1B2	400 kg	400 kg
Metal drum other than steel, or aluminium: 1N1 or 1N2	400 kg	400 kg
Plastics drum: 1H1 or 1H2	400 kg	400 kg
Steel jerrican: 3A1 or 3A2	120 kg	120 kg
Aluminium jerrican: 3B1 or 3B2	120 kg	120 kg
Plastics jerrican: 3H1 or 3H2	120 kg	120 kg
Steel box 4A	400 kg	400 kg
Aluminium box 4B	400 kg	400 kg
Natural wood box: 4C1 ¹	400 kg	400 kg
Plywood box: 4D ¹	400 kg	400 kg
Reconstituted wood box: 4F ¹	400 kg	400 kg
Natural wood with sift proof walls: 4C2	400 kg	400 kg
Fibreboard boxes: (4G) ¹	400 kg	400 kg
Expanded plastics: 4H1	60 kg	60 kg
Solid plastics: 4H2	400 kg	400 kg
Composite packaging		
Plastics receptacle in steel, aluminium, plywood, fibre or plastics drum: 6HA1, 6HB1, 6HG1, 6HD1, or 6HH1	400 kg	400 kg
Plastics receptacle in steel or aluminium crate or box, wooden box, plywood box, fibreboard box or solid plastics box: 6HA2, 6HB2, 6HC, 6HD2, 6HG2 or 6HH2	75 kg	75 kg
Glass receptacle in steel, aluminium, plywood or fibre drum: 6PA1, 6PB1, 6PD1 or 6PG1 or in steel, aluminium, wood, plywood or fibreboard box: 6PA2, 6PB2, 6PC, 6PD2, or 6PG2 or in solid or expanded plastics packaging: 6PH1 or 6PH2	75 kg	75 kg
¹These packagings may not be used when the substances being transported may become liquid during transport.		

This packing instruction applies to packing group II and III Division 4.1 wetted substances, Division 4.2 solid substances and Division 4.3 solid substances.

In ADR/RID and 49 CFR 5H4 bags are permitted for some packing group III substances. This may require a special provision allowing these bags for land transport. This requires further consideration. The Sub-Committee is invited to take note of this.

P500	PACKING INSTRUCTION	P500
<p>For UN 3356, Chemical oxygen generators, packagings shall conform to the packing group II performance level. The generator(s) shall be transported in a package which will meet the following requirements when one generator in the package is actuated:</p> <ul style="list-style-type: none"> (i) Other generators in the package will not be actuated; (ii) Packaging material will not ignite; and (iii) The outside surface temperature of the completed package shall not exceed 100°C. 		

This packing instruction applies to Oxygen generators, chemical, UN 3356. SP 284 would be amended (see Annex 2).

P501	PACKING INSTRUCTION		P501
Packaging shall not be filled to more than 90% of their capacity. The following packagings are authorized:			
	<u>Inner packaging capacity</u>	<u>Maximum net mass</u>	
Combination packagings consisting of glass, plastics or metal receptacles in boxes (4A, 4B, 4C1, 4C2, 4D, 4H2) or drums (1A2, 1B2, 1N2, 1H2, 1D)	5 l	125 kg	
Combination packagings consisting of plastics or metal receptacles each in a plastic bag in a fibreboard box (4G) or fibre drum (1G)	2 l	50 kg	
Metal drums (1A1, 1B1 or 1N1) with a maximum capacity of not more than 250 litres			

This packing instruction applies to Hydrogen Peroxide stabilized, UN 2015 only. This packing instruction takes into account the packing instructions in the IMDG Code (see page 5152, see also 068 -quantities increased to align with land mode) and ADR marginal 2503. The special packing provision is provided in ~~strikeout~~ because the experts from the US and UK believe that the general requirement for venting in 4.1.1.8 is sufficient. The Sub-Committee should consider this issue.

P502	PACKING INSTRUCTION		P502
The following packagings are authorized:			
Combination packagings:		<u>Maximum net mass</u>	
Inner packagings: Glass, metal or plastic receptacles with a maximum capacity of 5 litres.	Drums		
	Steel: 1A2	125 kg	
	Aluminium: 1B2	125 kg	
	Other metal:[1N2]	125 kg	
	Plastics:1H2	125 kg	
	Plywood: 1D	125 kg	
	Fibre: 1G	125 kg	
	Boxes		
	Steel: 4A	125 kg	
	Aluminium: 4B	125 kg	
	Natural wood: 4C1	125 kg	
	Natural wood with sift proof walls: 4C2	125 kg	
	Plywood: 4D	125 kg	
	Reconstituted wood: 4F	125 kg	
	Fibreboard: 4G	125 kg	
Expanded plastics: 4H1	60 kg		
Solid plastics: 4H2	125 kg		
Single packagings:			
Metal drums (1A1, 1B1 or [1N1]) with a maximum capacity of not more than 250 litres.			
Composite packagings consisting of a glass receptacle in a steel or aluminium drum (6HA1, 6HB1) with a maximum capacity of not more than 250 litres.			
Special packing provision			
40. UN 1873 only glass inner packagings are authorized. [Need to verify this is necessary -general compatibility requirements should be sufficient]. This is based on IMO concerns.			

This packing instruction applies to Perchloric acid, UN 1873 and other Division 5.1 packing group I and II liquids (i.e. UN 1510, 2526, 2626, 3049, 3098, 3099, 3149) See also IMO 069, 071 and 074 and ADR Marginal 2506.

P503		PACKING INSTRUCTION	P503
The following packagings are authorized:			
Combination packagings:		Maximum net mass	
Inner packagings: Glass, metal or plastic inner packagings with a maximum net mass of 5 kg.	Drums		
	Steel: 1A2		125kg
	Aluminium: 1B2		125kg
	Other metal:[1N2]		125kg
	Plastics:1H2		125kg
	Plywood: 1D		125kg
	Fibre: 1G		125kg
	Boxes		
	Steel: 4A		125 kg
	Aluminium: 4B		125 kg
	Natural wood: 4C1		125 kg
	Natural wood with sift proof walls: 4C2		125 kg
	Plywood: 4D		125 kg
	Reconstituted wood: 4F		125 kg
	Fibreboard: 4G		40 kg
Expanded plastics: 4H1		60 kg	
Solid plastics: 4H2		125 kg	
Single packagings:			
Metal drums (1A1, 1B1 or [1N1]) with a maximum net mass of 250 kg.			
Fibreboard or plywood drums fitted with inner liners with a maximum net mass of 200 kg.			

This packing instruction applies to packing group I Division 5.1 solids (i.e UN 1491, 1504, 2466, 2547) See IMO 073

P504	PACKING INSTRUCTION	P504
The following packagings are authorized:		
Combination packagings:		Maximum net mass
Glass receptacles with a maximum capacity of 5 litres in outer packagings (1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G, 4H2)		75 kg
Plastic receptacles with a maximum capacity of 30 litres in 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G, 4H2 outer packagings		75 kg
Metal receptacles with a maximum capacity of 40 litres in 1G, 4F or 4G outer packagings		125 kg
Metal receptacles with a maximum capacity of 40 litres in 1A2, 1B2, 1N2, 1H2, 1D, 4A, 4B, 4C1, 4C2, 4D, 4H2 outer packagings		225 kg
Single packagings:		Maximum capacity
Drums		
Steel non-removable head: 1A1		250 l
Aluminium non-removable head: 1B1		250 l
Other metal non-removable head: [1N1]		250 l
Plastics non-removable head: 1H1		250 l
Jerricans		
Steel jerrican non-removable head: 3A1		60 l
Aluminium jerricans non-removable head: 3B1		60 l
Plastics jerricans non-removable head: 3H1		60 l
Composite packagings		
Plastics receptacle in steel or aluminium drum: 6HA1, 6HB1		250 l
Plastics receptacle in fibre, plastics or plywood drum: 6HG1, 6HH1, 6HD1		120 l
Plastics receptacle in steel or aluminium crate or box or Plastic receptacle in wood, plywood, fibreboard or solid plastics box: 6HA2, 6HB2, 6HC, 6HD2, 6HG2 or 6HH2		60 l
Glass receptacle in steel, aluminium, fibre, plywood, solid plastics or expanded plastics drum: 6PA1, 6PB1, 6PG1, 6PD1, 6PH1 or 6PH2 or in a steel, aluminium, wood, fibreboard or plywood box: 6PA2, 6PB2, 6PC, 6PG2 or 6PD2		60 l
Special packing provision:		
44. For UN 2984 and 2014 inner packagings should be provided with a pressure relief device or vent. Stabilized solutions which decompose at a very slow rate do not require the venting. Minimum ullage shall be 10%.		

This packing instruction applies to packing group II and III Division 5.1 liquids. The special packing provision is provided in ~~strikeout~~ because the experts from the US and UK believe that the general requirement for venting in 4.1.1.8 is sufficient. The Sub-Committee should consider this issue.

Packing group II and III Division 5.1 solid substances would be assigned to P002.

P600	PACKING INSTRUCTION	P600
These articles shall be individually packaged in 1A2, 1B2, [1N2], 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G, 4H2 outer packagings with a maximum net mass of 75 kg which meet the packing group II performance level. The articles shall be separated from each other using partitions, dividers, inner packagings or cushioning material to prevent movement and inadvertent discharge during normal conditions of transport.		

This packing instruction applies to Ammunition, toxic, non-explosive, UN 2016, Ammunition, tear producing, UN 2017 and Tear gas candles, UN 1700. (See IMO 077,088)

P601	PACKING INSTRUCTION	P601
For UN 3315, Chemical sample, toxic the packaging shall incorporate features such as security seals, coatings or wraps to provide an indication of tampering. Consignments of Chemical samples, toxic, liquid or solid shall be prepared in such a manner that they arrive at their destination in good condition and present no hazard to persons during shipment. They shall be packed according to the International Civil Aviation Organizations packing instruction 623 (see the Supplement to the ICAO Technical Instructions).		

This packing instruction applies to UN 3315, Chemical sample, toxic. This packing instruction is consistent with ICAO PI 623 in the Supplement to the ICAO TI.

P620	PACKING INSTRUCTION	P620
<p>For UN 2814 and 2900, Infectious substances, packagings shall include:</p> <p>(a) Inner packagings comprising:</p> <ul style="list-style-type: none"> (i) watertight primary receptacle(s); (ii) a watertight secondary packaging; (iii) an absorbent material in sufficient quantity to absorb the entire contents placed between the primary receptacle(s) and the secondary packaging; if multiple primary receptacles are placed in a single secondary packaging, they shall be individually wrapped so as to prevent contact between them; <p>(b) An outer packaging of adequate strength for its capacity, mass and intended use. The smallest external dimension shall be at least 100 mm.</p> <p>Inner packagings containing infectious substances shall not be consolidated with inner packagings containing unrelated types of goods. Complete packages may be overpacked in accordance with the provisions of 1.2.1 and 5.1.2: such an overpack may contain dry ice.</p>		
<p>Other than for exceptional consignments, e.g. whole organs which require special packaging, infectious substances shall be packed in accordance with the following provisions.</p> <p>(a) Lyophilized substances:</p> <p style="padding-left: 40px;">Primary receptacles shall be flame-sealed glass ampoules or rubber-stoppered glass vials fitted with metal seals;</p> <p>(b) Liquid or solid substances:</p> <ul style="list-style-type: none"> (i) Substances consigned at ambient temperatures or at a higher temperature. Primary receptacles shall be of glass, metal or plastics. Positive means of ensuring a leakproof seal shall be provided, e.g. a heat seal, a skirted stopper or a metal crimp seal. If screw caps are used, they shall be reinforced with adhesive tape; (ii) Substances consigned refrigerated or frozen. Ice, dry ice or other refrigerant shall be placed around the secondary packaging(s) or alternatively in an overpack with one or more complete packages marked in accordance with 6.3.1.1. Interior supports shall be provided to secure secondary packaging(s) or packages in position after the ice or dry ice has dissipated. If ice is used, the outer packaging or overpack shall be leakproof. If dry ice is used, the outer packaging or overpack shall permit the release of carbon dioxide gas. The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the refrigerant used; (iii) Substances consigned in liquid nitrogen. Plastics primary receptacles capable of withstanding very low temperature shall be used. The secondary packaging shall also be capable of withstanding very low temperatures, and in most cases will need to be fitted over the primary receptacle individually. Provisions for the consignment of liquid nitrogen shall also be fulfilled. The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the liquid nitrogen. <p>Whatever the intended temperature of the consignment, the primary receptacle or the secondary packaging shall be capable of withstanding without leakage an internal pressure producing a pressure differential of not less than 95 kPa and temperatures in the range -40 °C to +55 °C.</p>		

P800 PACKING INSTRUCTION P800	
<p>For UN 2803, Mercury and UN 2809, Gallium cylinders and steel flasks with vaulted bottoms approved by the competent authority are authorized. Combination packagings which conform to the following requirements are also authorized:</p> <p>(1) Combination packagings shall comprise glass or rigid plastics inner packagings intended to contain liquids with a maximum net mass of 10 kg each. The inner packagings shall be packed with sufficient cushioning material to prevent breakage. Either the inner packagings or the outer packagings shall have inner liners or bags of strong leakproof and puncture-resistant material impervious to the contents and completely surrounding the contents to prevent it from escaping from the package irrespective of its position or orientation. The following outer packagings and maximum net masses are authorized:</p>	
Outer packaging	Maximum net mass
Steel: 1A2	400 kg
Aluminium: 1B2	400 kg
Other metal:[1N2]	400 kg
Plastics:1H2	400 kg
Plywood: 1D	400 kg
Fibre: 1G	400 kg
Boxes	
Steel: 4A	400 kg
Aluminium: 4B	400 kg
Natural wood: 4C1	250 kg
Natural wood with sift proof walls: 4C2	250 kg
Plywood: 4D	250 kg
Reconstituted wood: 4F	125 kg
Fibreboard: 4G	125 kg
Expanded plastics: 4H1	60 kg
Solid plastics: 4H2	125 kg
<p>(2) When it is necessary to transport Gallium at low temperatures in order to maintain it in a completely solid state, the above packagings may be overpacked in a strong, water-resistant outer packaging which contains dry ice or other means of refrigeration. If a refrigerant is used, all of the above materials used in the packaging of gallium shall be chemically and physically resistant to the refrigerant and shall have impact resistance at the low temperatures of the refrigerant employed. If dry ice is used, the outer packaging shall permit the release of carbon dioxide gas.</p> <p>(3) For air transport, packagings shall meet the packing group I performance level.</p>	

This packing instruction applies to Mercury, UN 2809 and Gallium, UN 2803. It was revised to be more consistent with ADR Marginal 2807(4). (See also IMO 094)

P801 PACKING INSTRUCTION P801	
<p>Packagings shall conform to the packing group III performance level. Batteries shall be protected against short circuits. Batteries may be carried on pallets or in crates when they conform to the following conditions:</p> <p>(1) the batteries shall be stacked and adequately secured in tiers separated by a layer of non-conductive material.</p> <p>(2) the battery terminals shall not, in any case, support the weight of other superimposed elements.</p> <p>(3) the batteries shall be isolated in such a manner as to prevent short circuits.</p> <p>(4) for sea transport batteries as prepared for transport shall be capable of passing a tilt test at an angle of 45° with no spillage of liquid.</p>	

This packing instruction applies to wet and dry batteries, UN2794, UN2795 and UN3028.

P802	PACKING INSTRUCTION	P802
<p>Combination packagings consisting of glass or plastic inner packagings with a capacity of not more than 10 litres in 1A2, 1B2, 1N2, 1H2, 1D, 4A, 4B, 4C1, 4C2, 4D, 4F, or 4H2 outer packagings with a maximum net mass of 75 kg.</p> <p>Combination packagings consisting of metal inner packagings with a maximum capacity of 40 litres in 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G or 4H2 outer packagings with a maximum net mass of 125 kg.</p> <p>Glass receptacle in steel, aluminium, plywood or solid plastics drum: 6PA1, 6PB1, 6PD1, or 6PH2 or in a steel, aluminium, wood or plywood box: 6PA2, 6PB2, 6PC or 6PD2 with a maximum capacity of 60 litres.</p> <p>Austenitic steel drums (1A1) with a maximum capacity of 250 litres.</p> <p>Gas cylinders conforming to the construction, testing and filling requirements approved by the competent authority.</p> <p>The permissible period of use for packagings intended for the transport of UN 2031, Nitric acid and UN 1790 hydrofluoric acid shall be two years from the date of manufacture.</p>		
Special packing provision:		
<p>50. For UN 2031, Nitric acid and UN 1790 Hydrofluoric acid, the permissible period of use for plastic packagings shall be two years from the date of manufacture.</p>		

This packing instruction applies to Nitric acid, other than red fuming, UN 2031, Nitrohydrochloric acid, UN 1798, and other strong acids of packing group I (i.e. 1754, 1777, 1796, 1826, 1828 and 2699). A packing instruction for nitric acid red fuming, UN 2032, Sulphuric acid fuming & spent, UN 1831, Bromine, UN and other TIH substances will be addressed in a separate paper which will be submitted by the US for the 15th session of the Sub-Committee. (See also IMO 096 and ADR Marginal 2805)

P803	PACKING INSTRUCTION	P803
<p>For UN 2028, articles shall be individually packaged in 1A2, 1B2, 1N2, 1H2, 1D, 1G, 4A, 4B, 4C1, 4C2, 4D, 4F, 4G, or 4H2 outer packagings with a maximum net mass of 75 kg. The articles shall be separated from each other using partitions, dividers, inner packagings or cushioning material to prevent movement and inadvertent discharge during normal conditions of transport.</p>		

This packing instruction applies to Bombs, smoke, non-explosive, UN 2028. (See also IMO 101).

P900	PACKING INSTRUCTION	P900
<p>UN 2216, fish meal or fish scrap, containing at least 5 % but not more than 12 % moisture content, shall be packed in the following packagings:</p> <p>Bags (5H1, 5H2, 5H3, 5H4, 5L1, 5L2, 5L3, 5M1 or 5M2) with a maximum net mass of 50 kg;</p> <p>Fishmeal may be transported unpackaged when it is packed in freight containers or transport vehicles and the free air space has been restricted to a minimum.</p>		

This packing instruction applies to stabilized fish meal or fish scrap (UN 2216).

P901	PACKING INSTRUCTION	P901
<p>Each packaging shall conform to the performance level consistent with the packing group assigned to the kit as a whole (see SP 251). Dangerous goods in kits shall be packed in inner packagings which shall not exceed either 250 ml or 250 g and shall be protected from other materials in the kit. The total quantity of dangerous goods in an outer package shall not exceed 10 kg.</p>		

This packing instruction applies to chemical or first aid kits (UN 3316). SP 251 should be amended (see Annex 2).

P902	PACKING INSTRUCTION	P902
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Each packaging shall conform to the packing group III performance level. The packaging shall be designed and constructed to prevent movement of the articles and inadvertent discharge during normal conditions of transport. Air bag inflators or modules or seat belts pretensioners may be carried unpackaged in dedicated handling devices, vehicles, containers or wagons when moved from where they are manufactured to an assembly plant.

This packing instruction applies to Air bag inflators, air bag modules or seat-belt pretensioners (UN 3268). SP 235 should be amended (see Annex 2).

P903	PACKING INSTRUCTION	P903
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Each packaging shall conform to the packing group II performance level. Cells and batteries shall be packaged in inner packagings to effectively prevent short circuits and to prevent movement which could lead to short circuits.

When lithium cells and batteries are packed with equipment, they shall be packed in inner fibreboard packagings that meet the requirements for packing group II. When lithium cells and batteries included in Class 9 are contained in equipment, the equipment shall be packed in strong outer packagings in such a manner as to prevent accidental operation during transport.

This packing instruction applies to lithium batteries and cells and lithium batteries and cells contained in equipment, UN 3090, 3091. SP 230 should be amended and SP 231 should be deleted (see Annex 2).

P904	PACKING INSTRUCTION	P904
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Packagings need not conform to the packaging test requirements of Part 6. Packagings shall conform to the following:

- (a) an inner packaging comprising:
 - (i) a watertight primary receptacle(s);
 - (ii) a watertight secondary packaging which is leakproof;
 - (iii) absorbent material in sufficient quantity to absorb the entire contents placed between the primary receptacle(s) and the secondary packaging; if several primary receptacles are placed in a single secondary packaging, they shall be individually wrapped so as to prevent contact between them.
- (b) an outer packaging of adequate strength for its capacity, mass and intended use, and with a minimum external dimension of 100 mm.

This packing instruction applies to genetically modified micro-organisms, UN3245. SP 219 should be amended (see Annex 2).

P905	PACKING INSTRUCTION	P905
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Packagings need not conform to the packaging test requirements of Part 6. When the life saving appliances are constructed to incorporate or are contained in rigid outer weatherproof casings (such as for lifeboats), they may be transported unpackaged. All dangerous substances and articles contained as equipment within the appliances shall be secured to prevent inadvertent movement and in addition:

- a) Signal devices of Class 1 shall be packed in plastics or fibreboard inner packagings;
- b) Gases (Class 2.2) shall be contained in cylinders as specified by the competent authority, which may be connected to the appliance;
- c) Electric storage batteries (Class 8) shall be disconnected or electrically isolated and secured to prevent any spillage of liquid; and
- d) Small quantities of other dangerous substances shall be packed in strong inner packagings.

Preparation for transport and packaging shall include provisions to prevent any accidental inflation of the appliance.

This packing instruction applies life saving appliances (UN 3072 and 2990).

P906	PACKING INSTRUCTION	P906
<p>Liquids and solids containing or contaminated with PCBs shall be packaged in accordance with P001 or P002, as appropriate. Transformers and condensers and other devices may be transported in leakproof packagings which are capable of containing, in addition to the devices, at least 1.25 times the volume of the liquid PCBs present in them. There shall be sufficient absorbent material in the packagings to absorb at least 1.1 times the volume of liquid which is contained in the devices. In general, transformers and condensers shall be carried in leakproof metal packagings which are capable of holding, in addition to the transformers and condensers, at least 1.25 times the volume of the liquid present in them. Adequate provisions shall be taken to seal the transformers and condensers to prevent leakage during</p> <p>[Notwithstanding the above, liquids and solids not packaged in accordance with P001 and P002 and unpackaged transformers and condensers shall be transported in cargo transport units fitted with a leakproof metal tray to a height of 800mm, containing sufficient inert absorbent material to absorb at least 1.1 times the volume of any free liquid.]</p>		

This packing instruction applies Polychlorinated biphenyls (PCBs), UN 2315, 3151, 3152. This packing instruction was amended based on comments from IMO concerning the requirements recently adopted for Amdt 29. The Sub-Committee should note the text in brackets.

Annex 2SPECIAL PROVISIONS

Note: Unless otherwise identified these special provisions are currently in Chapter 3.3 of the UN Model Regulation. Some or part of these are proposed to be incorporated into the packing instructions consistent with the guiding principles for the development of packing instructions adopted by the Sub-Committee. The requirements unrelated to packaging will be retained in Chapter 3.3. The following is a proposed list of the special provisions currently in the Model regulation along with proposed amendments and additional provisions which are necessary to conform to the guiding principles adopted by the Sub-Committee.

15,16, 18 *Special provisions (SPs) 15, 16 and 18 are not addressed because even though they specify minimum quantities per package they are directly related to classification. It is proposed that these SPs remain in Chapter 3.3 without amendment.*

25 ~~Nitroglycerin solution in alcohol may be transported under this entry only when the solution is packed in metal cans of not more than 1 litre capacity each, overpacked in a wooden box containing not more than 5 litres. Metal cans shall be completely surrounded with absorbent cushioning material. Wooden boxes shall be completely lined with a suitable material impervious to water and nitroglycerin. This SP is proposed to be incorporated as P300 (see Annex 1).~~

29 ~~This substance is exempt from labelling and packaging tests, but shall be marked with the appropriate class or division and the packing group. SP 29 should remain in Chapter 3.3. The deleted text should be included in the appropriate packing instructions (i.e. P003, P900, etc.).~~

80 ~~Packagings shall be so constructed that explosion is not possible by reason of increased internal pressure. This SP currently applies to nitrocellulose entries; UN 2555, 2556, 2557 and 3270. This SP is proposed to be incorporated in P405.~~

114 ~~This substance may be carried in quantities of not more than 500 grams per package. This SP only applies to Dipicryl sulphide, wetted, UN 2852. This requirement should more appropriately be placed in a packing instruction according to the agreed upon guidelines. This SP is proposed to be incorporated in P405 as special packing provision P31 (see Annex 1).~~

117 **Subject to these Regulations only when transported by sea. [Fish meal or fish scrap shall not be transported if the temperature at the time of loading exceeds 35°C or 5°C above the ambient temperature, whichever is higher. Fish scrap or fish meal shall contain at least 100 ppm of anti-oxidant (ethoxyquin) at the time of shipment.]** *The latter two sentences were taken from the IMDG Code. It is proposed that they be added to SP 117.*

~~123 For air transport, the packagings shall meet Packing Group I requirements. This is proposed for deletion because it is proposed to be incorporated in P800 for Gallium and Mercury.~~

132 ~~Unless otherwise approved by the competent authority, packaging shall be a fibre drum which may be lined, the maximum contents of which shall not exceed 50 kg. During the course of transport, this substance shall be protected from direct sunshine and stored (or kept) in a cool and well ventilated place, away from all sources of heat. SP 132 should be retained in Chapter 3.3. The strikethrough text is proposed as P408. This applies to UN 2956 and 3251.~~

~~187 Except for transport by the air mode, packaging tests are not necessary for substances of Packing Groups II and III in quantities of 5 litres or less per metal or plastics packaging~~

~~(a) In palletized loads, e.g. individual packagings placed or stacked and secured by strapping, shrink or stretch-wrapping or other suitable means to a pallet; or~~

~~(b) As an inner packaging of a combination packaging with a maximum total gross mass of 40 kg.~~

This SP is proposed for deletion because it is proposed to be incorporated in P001, as a special packing provision P1. This applies to UN 1133, Adhesives, UN 1210, Printing Ink, UN 1263, Paint and UN 1866 Resin solution (see Annex 1).

201 Lighters and lighter refills shall comply with the provisions of the country in which they were filled. They shall be provided with protection against inadvertent discharge. The liquid portion of the gas shall not exceed 85% of the capacity of the receptacle at 15 °C. The receptacles, including the closures, shall be capable of withstanding an internal pressure of twice the pressure of the liquefied petroleum gas at 55 °C. The valve mechanisms and ignition devices shall be securely sealed, taped or otherwise fastened or designed to prevent operation or leakage of the contents during transport. ~~The lighters or lighter refills shall be tightly packed to prevent inadvertent operation of the release devices.~~ Lighters shall not contain more than 10 g of liquefied petroleum gas. Lighter refills shall not contain more than 65 g of liquefied petroleum gas. *This SP should be amended by deleting the penultimate sentence. The SP should be retained in Chapter 3.3. The deleted sentence is proposed to be incorporated into packing instruction P003, as a special packing provision P 21.*

209 The gas shall be at a pressure corresponding to ambient atmospheric pressure at the time the containment system is closed and this shall not exceed 105 kPa absolute. ~~The gas shall be contained in hermetically sealed glass or metal inner packagings and with a maximum net quantity per package of 5 litres or, in the case of a toxic gas, a maximum net quantity per package of 1 litre.~~ *This SP should be amended by deleting the last sentence. The SP should be retained in Chapter 3.3. The deleted text is proposed for incorporation in packing instruction P201. This applies to UN 3167, 3168 and 3169 (Gas samples).*

~~214 For certain self-reactive substances of types B or C, a smaller packaging than that allowed by packing methods OP5 or OP6 respectively shall be used (see 4.1.5 and 2.4.2.3.2.4). This SP is proposed to be deleted from Chapter 3.3 and incorporated as P25 in P052. This applies to a number of Type B and C self-reactive substances, UN 3221, 3222, 3223, 3224, 3231, 3232, 3233 and 3234 (see Annex 1).~~

In SP 216, SP 217 and SP 218 the sentence "Each packaging shall correspond to a design type that has passed a leakproofness test at the Packing Group II performance level." would be deleted. The remainder of the SPs should be retained in Chapter 3.3. The deleted text is proposed to be incorporated as a particular packing provision or exception in P002, P 11 (see Annex 1). This applies to solids containing flammable liquids (UN 3175), toxic liquids (UN 3243) and corrosive liquids (UN 3244).

~~219 Substances transported under this entry shall be packaged in accordance with 2.6.3.3.4. Genetically modified micro-organisms which are infectious shall be transported as UN 2814 or UN 2900. The first sentence of this SP is proposed to be incorporated in P904 as a packing instruction for genetically modified micro-organisms, UN 3245. The reference to 2.6.3.3.4 is not correct since this paragraph does not exist. The Sub-Committee should consider whether the second sentence of SP 219 should be retained in Chapter 3.3 since 2.6.3.1.4(a) also states "Genetically modified micro-organisms which meet the definition of an infectious substance given above shall be classified in Division 6.2 and assigned to UN 2814 or to UN 2900" .~~

- 221 Substances included under this entry shall not be of Packing Group I and shall have a maximum net quantity per package of 5 litres or 5 kg. *This SP applies to Medicines (UN 1851, 3248 and 3249) should be retained in Chapter 3.3 without amendment since the quantity per package is a condition of classification and use of the medicines entries.*
- 229 ~~To be transported in strong outer packagings.~~ *This special provision applies to UN 1057, 1044, 1950, 2037 and 3150. It is proposed that this SP be deleted since it is proposed to be incorporated in P003.*
- 230 *In SP 230 paragraph (g) should be deleted. This text would be incorporated in packing instruction P903*
- 231 ~~When lithium cells and batteries included in Class 9 are packed with equipment, they shall be packed in inner fibreboard packagings that meet the requirements for Packing Group II. When lithium cells and batteries included in Class 9 are contained in equipment, the equipment shall be packed in strong outer packagings in such a manner as to prevent accidental operation during transport. This SP would be incorporated in packing instruction P903~~
- 233 ~~These substances shall be packaged in accordance with standards specified by the competent authority of the country of origin. This SP applies to Elevated temperature solid, n.o.s., UN 3258 only. This SP is proposed to be deleted as P099 (competent authority packing instruction) is proposed to be assigned to this entry.~~
- 235 This entry applies to articles which may be classified in Class 1 in accordance with 2.1.1.1, 2.1.1.2 and 2.1.1.3, which are used as life-saving vehicle air bags or seat-belts, when transported as component parts and when these articles as presented for transport have been tested in accordance with Test series 6 (c) of Part I of the Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria, with no explosion of the device, no fragmentation of device casings, and no projection hazard or thermal effect which would significantly hinder fire-fighting or other emergency response efforts in the immediate vicinity. If the air bag inflator unit satisfactorily passes the series 6(c) test, it is not necessary to repeat the test on the air bag module itself. ~~Such air bag inflators or modules or seat-belt pretensioners may be transported unpackaged in dedicated handling devices or transport units when transported from where they are manufactured to an assembly plant.~~ Air bags or seat-belts installed in vehicles or in completed vehicle components such as steering columns, door panels, seats, etc. are not subject to these Regulations. *This SP should be retained in Chapter 3.3. The text proposed to be deleted would be incorporated in packing instruction P902.*
- 236 Polyester resin kits consist of two components: a base material (Class 3, Packing Group II or III) and an activator (organic peroxide), ~~each separately packed in an inner packaging.~~ The organic peroxide shall be type D, E or F, not requiring temperature control, ~~and be limited to a quantity of 125 ml per inner packaging if liquid, and 500 g if solid.~~ The components may be placed in the same outer packaging provided they will not interact dangerously in the event of leakage. Packing group shall be II or III, according to the criteria for Class 3, applied to the base material. The quantity limit shown in Column 7 of the Dangerous Goods List applies to the base material. *It is proposed that this SP be retained in Chapter 3.3 and that the packaging provisions shown in strike out be included in P302.*
- 238 *In SP 238 the last sentence should be deleted since this is proposed to be incorporated in P801.*
- 239 Except for air transport, batteries or cells shall not contain dangerous goods other than sodium, sulphur and/or polysulphides. Batteries or cells shall not be offered for transport at a temperature such that liquid elemental sodium is present in the battery or cell unless approved and under the conditions established by the competent authority.

Cells shall consist of vapour tight metal casings which fully enclose the dangerous goods and which are so constructed and closed as to prevent the release of the dangerous goods under normal conditions of transport. ~~Cells shall be placed in suitable outer packagings with sufficient cushioning material to prevent contact between cells and between cells and the internal surfaces of the outer packaging, and to ensure that no dangerous movement of the cells within the outer packaging occurs in transport. Packagings shall be tested and marked according to the provisions applicable to Packing Group II solids.~~

Batteries shall consist of cells secured within and fully enclosed by a metal casing so constructed and closed as to prevent the release of the dangerous goods under normal conditions of transport. ~~Batteries may be offered for transport and transported unpacked or in protective enclosures (e.g. in fully enclosed or wooden slatted crates) that are not subject to the packaging testing provisions of these Regulations.~~

Batteries installed in vehicles (UN 3171) are not subject to these Regulations. *The SP should be retained in Chapter 3.3. It only applies to UN 3292. This SP should be amended by deleting the second paragraph except for the first sentence and the last sentence of the last paragraph. The text proposed to be deleted is proposed to be incorporated in packing instruction P407.*

246 This substance shall be packed in accordance with packing method OP6 (see applicable packing instruction). During transport, it shall be protected from direct sunshine and stored (or kept) in a cool and well-ventilated place, away from all sources of heat. *This SP only applies to 2-Bromo-2-nitropropane-1,3-diol, UN 3231. Although this SP addresses a packaging requirements it is proposed that it be retained in Chapter 3.3 especially since it only deals with one substance.*

~~248 Substances in Division 1.5D may be transported in metal, flexible, rigid plastics and composite intermediate bulk containers (IBCs) that meet the applicable requirements of Chapter 6.5 at the Packing Group II level of performance. Flexible IBCs may only be used for solid substances. SP 248 should be deleted and incorporated in packing instruction 117.~~

251 The entry CHEMICAL KIT or FIRST AID KIT is intended to apply to boxes, cases etc. containing small quantities of various dangerous goods which are used for medical, analytical or testing purposes. Such kits may not contain dangerous goods listed in 3.4.1.

Components shall not react dangerously (see 4.1.1.6). ~~Dangerous goods in kits shall be packed in inner packagings which shall not exceed either 250 ml or 250 g and shall be protected from other materials in the kit. The total quantity of dangerous goods in any one kit shall not exceed either 1 l or 1 kg. The maximum total quantity of dangerous goods in any one outer package shall not exceed 10 kg. The packing group assigned to the kit as a whole shall be the most stringent packing group assigned to any individual substance in the kit.~~

~~Kits shall be packed in packagings which meet the requirements appropriate to the packing group assigned to the kit as a whole.~~

Kits which are carried on board vehicles for first-aid or operating purposes are not subject to these Regulations. *The requirements proposed for deletion would be incorporated in packing instruction P901.*

280 *In this SP the words "The pressure vessel shall be in compliance with the requirements for the gases, contained in the pressure vessel." would be deleted and incorporated in P202.*

284 An oxygen generator, chemical, containing oxidizing substances shall meet the following conditions:

- (a) The generator when containing an explosive actuating device shall only be transported under this entry when excluded from Class 1 in accordance with paragraph 2.2.1.3 of these Model Regulations;

(b) ~~In addition to the requirements of Packing Group II applicable to the package,~~ the generator, without its packaging, shall be capable of withstanding a 1.8 m drop test onto a rigid, non-resilient, flat and horizontal surface, in the position most likely to cause damage, without loss of its contents and without actuation;

(c) When a generator is equipped with an actuating device, it shall have at least two positive means of preventing unintentional actuation; and

~~(d) The generator(s) shall be transported in a package which will meet the following requirements when one generator in the package is actuated:~~

~~(i) other generators in the package will not be actuated;~~

~~(ii) packaging material will not ignite; and~~

~~(iii) the outside surface temperature of the completed package shall not exceed 100 °C.~~

Paragraph (d) should be deleted since the text is incorporated in P500.

New special provisions proposed to be added in Chapter 3.3:

A new SP would be added in Chapter 3.3 for UN1331, UN1944, UN1945 and UN2254 as follows:

XXX The following definitions apply to matches:

(1) Fusee matches are matches the heads of which are prepared with a friction-sensitive igniter composition and a pyrotechnic composition which burns with little or no flame, but with intense heat.

(2) Safety matches are matches combined with or attached to the box, book or card that can be ignited by friction only on a prepared surface.

(3) Strike anywhere matches are matches that can be ignited by friction on a solid surface.

(4) Wax Vesta matches are matches that can be ignited by friction either on a prepared surface or on a solid surface.

A new SP would be added in Chapter 3.3 for UN 1944 and 1945 as follows:

XXX Safety matches and wax "Vesta" matches in outer packagings not exceeding 25 kg net mass are not subject to any other requirement (except marking) of this Model Regulation when packaged in accordance with packing instruction P406.

A new SP should be added in Chapter 3.3 as follows:

XXX Batteries need not be individually marked and labelled if the pallet bears the appropriate mark and label. *This would apply to UN 2794, 2795 and 3028.*

A New SP should be added in Chapter 3.3 for UN2990 and UN3072 as follows:

XXX These articles may contain:

- (1) Division 2.2 compressed gases.
- (2) Signal devices (Class 1) which may include smoke and illumination signal flares; signal devices must be packed in plastic or fibreboard inner packagings.
- (3) Electric storage batteries.
- (4) First aid kits.
- (5) Strike anywhere matches.

A New SP should be added in Chapter 3.3 for UN 1845 as follows:

XXX For each shipment by air exceeding 2.3 kg per package, advance arrangements shall be made between the shipper and each carrier. Not more than 200 kg of solid carbon dioxide may be transported in any one cargo compartment or bin on any aircraft except by specific and special written arrangement between the shipper and the aircraft operator.

Transport units containing solid carbon dioxide, when transported on board ocean vessels, shall be conspicuously marked on two sides "WARNING CO₂ SOLID (DRY ICE)." Other packagings containing solid carbon dioxide, when transported on board ocean vessels, shall be marked "CARBON DIOXIDE, SOLID-DO NOT STOW BELOW DECKS."

Carbon dioxide, solid (dry ice) is excepted from the shipping paper requirements if the package is marked "Carbon dioxide, solid" or "Dry ice" and is marked with an indication that the substance being refrigerated is used for diagnostic or treatment purposes (e.g., frozen medical specimens). *This is taken from the ICAO TI, PI 904 and the IMDG Code (see page 9025).*
