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COMMITTEE OF EXPERTS ON THE TRANSPORT

OF DANGEROUS GOODS

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**WORK OF THE SUB-COMMITTEE OF EXPERTS
ON THE TRANSPORT OF DANGEROUS GOODS**

**Consolidated version of draft amendments to the 11th revision of the
Model Regulations on the Transport of Dangerous Goods**

Note by the secretariat

The secretariat has prepared a consolidated version of all draft amendments to the Model Regulations adopted by the Sub-Committee at its sixteenth, seventeenth and eighteenth sessions, in accordance with the successive decisions taken at these sessions (see ST/SG/AC.10/C.3/32; -/C.3/34 and -/C.3/36 for decisions and -/C.3/32/Add.2, -/C.3/34/Add.2 and -/C.3/36/Add.1 for adopted texts).

**DRAFT AMENDMENTS TO THE 11TH REVISED EDITION OF THE UN
RECOMMENDATIONS ON THE TRANSPORT OF DANGEROUS GOODS
(Refer to ST/SG/AC.10/Rev.11)**

Replace the word "carriage" with "transport" throughout the Recommendations and the Model Regulations on the Transport of Dangerous Goods.

Model Regulations on the Transport of Dangerous Goods

CHAPTER 1.2

1.2.1 Amend as follows:

- Add the following definition:

“Aerosols or aerosols dispensers are non-refillable receptacles meeting the requirements of 6.2.2, made of metal, glass or plastics and containing a gas, compressed, liquefied or dissolved under pressure, with or without a liquid, paste or powder, and fitted with a release device allowing the contents to be ejected as solid or liquid particles in suspension in a gas, as a foam, paste or powder or in a liquid state or in a gaseous state.”

- Incorporate all the IBC definitions under "IBC" in the alphabetical list as follows:

“Remanufactured IBCs are metal, rigid plastics or composite IBCs that:

- (a) are produced as a UN type from a non-UN type; or
- (b) are converted from one UN design type to another UN design type.

Remanufactured IBCs are subject to the same requirements of these Regulations that apply to new IBCs of the same type (see also design type definition in 6.5.4.1.1).”

Repaired IBCs are metal, rigid plastics or composite IBCs that, as a result of impact or for any other cause (e.g. corrosion, embrittlement or other evidence of reduced strength as compared to the design type) are restored so as to conform to the design type and to be able to withstand the design type tests. For the purposes of these Regulations, the replacement of the rigid inner receptacle of a composite IBC with a receptacle conforming to the original manufacturer’s specification is considered repair. However, routine maintenance of IBCs (see definition below) is not considered repair. The bodies of rigid plastics IBCs and the inner receptacles of composite IBCs are not repairable.

Routine maintenance of IBCs is the routine performance on metal, rigid plastics or composite IBCs of operations such as:

- (a) Cleaning;

- (b) Removal and reinstallation or replacement of body closures (including associated gaskets), or of service equipment, conforming to the original manufacturer's specifications, provided that the leaktightness of the IBC is verified; or
 - (c) Restoration of structural equipment not directly performing a dangerous goods containment or discharge pressure retention function so as to conform to the design type (e.g. the straightening of legs or lifting attachments) provided that the containment function of the IBC is not affected."
- Amend the definitions of "Passenger aircraft", "Liquids" and "Salvage packagings" to read as follows:

"Passenger aircraft means an aircraft that carries any person other than a crew member, a carrier's employee in an official capacity, an authorized representative of an appropriate national authority, or a person accompanying a consignment or other cargo;"

"Liquids are dangerous goods which at 50 °C have a vapour pressure of not more than 300 kPa (3 bar), which are not completely gaseous at 20 °C and at a pressure of 101.3 kPa, and which have a melting point or initial melting point of 20 °C or less at a pressure of 101.3 kPa. A viscous substance for which a specific melting point cannot be determined shall be subjected to the ASTM D 4359-90 test; or to the test for determining fluidity (penetrometer test) prescribed in section 2.3.4 of Annex A of the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)¹ [with the modifications that the penetrometer shall conform to ISO 2137:1985 and that the test shall be used for viscous substances of any class];" *

"Salvage packagings are special packagings into which damaged, defective, leaking or non-conforming dangerous goods packages, or dangerous goods that have spilled or leaked, are placed for purposes of transport for recovery or disposal;".

¹ United Nations publication: [ECE/TRANS/130].

* The secretariat suggests deleting the text in square brackets because section 2.3.4 of the restructured ADR refer to ISO 2137:1985 and its application is not class related.

CHAPTER 2.0

2.0.1.3 Amend to read as follows:

“2.0.1.3 For packing purposes, substances of all classes other than Classes 1, 2 and 7, divisions 5.2 and 6.2 and the self-reactive substances of Division 4.1, are assigned to three packing groups in accordance with the degree of danger presented by the substance. The packing groups have the following meanings:

- Packing group I: Substances presenting high danger;
- Packing group II: Substances presenting medium danger; and
- Packing group III: Substances presenting low danger.

The packing group to which a substance is assigned is indicated in the Dangerous Goods List in Chapter 3.2”*.

2.0.3.3 **Add at the top of the table "Class or Division and Packing Group" and amend the entries for Class 3 and Division 4.3 to read as follows:**

Class or Division and Packing Group		4.3
3	I*/	4.3
3	II*/	4.3
3	III*/	4.3

2.0.4.1 In the first sentence of the third paragraph and in the first example the word "sample" shall be in upper case to read as follows:

"... shall be supplemented with the word "SAMPLE" (e.g., FLAMMABLE LIQUID, N.O.S., SAMPLE)"

Insert "proper" when missing before the words "shipping name" (twice).

CHAPTER 2.1

2.1.3.1.2 (d) Delete.

CHAPTER 2.2

2.2.1.1 Add the following Note:

“NOTE: *Carbonated beverages are not subject to these Regulations.”.*

* Editorial suggestion by the secretariat: Amend the beginning of 2.0.1.3 to read: "For packing purposes, substances other than those of Classes 1, 2 and 7, divisions 5.2 and 6.2 and other than self-reactive substances of Division 4.1 are assigned to three packing groups according to the degree of danger they present: ...".

2.2.2.1 Add the following note at the end of the introductory sentence:

"NOTE: For UN 1950 AEROSOLS, see also the criteria in special provision 63 and for UN 2037 RECEPTACLES, SMALL, CONTAINING GAS (GAS CARTRIDGES) see also special provision 303."

Delete the NOTE under 2.2.2.1 (a).

CHAPTER 2.4

Introductory Notes: Delete Note 3.

2.4.2.3.2.3 Add the following entries:

SELF-REACTIVE SUBSTANCE	Concentration (%)	Packing method	Control temperature (°C)	Emergency temperature (°C)	UN generic entry	Remarks
2-DIAZO-1-NAPHTHOL SULPHONIC ACID ESTER MIXTURE, TYPE D	< 100%	OP7			3226	(9)
2,5-DIETHOXY-4-(4-MORPHOLINYL)-BENZENEDIAZONIUM SULPHATE	100%	OP7			3226	
4-(DIMETHYLAMINO)-BENZENEDIAZONIUM TRICHLOROZINCATE (-1)	100%	OP8			3228	
2,5-DIBUTOXY-4-(4-MORPHOLINYL)-BENZENEDIAZONIUM, TETRACHLOROZINCATE (2:1)	100%	OP8			3228	

In the list of self-reactive substances:

Under "Self-reactive substance" amend the following entries:

- For "BENZENE-1,3-DISULPHOHYDRAZIDE, as a paste" read "BENZENE-1,3-DISULPHONYL HYDRAZIDE, as a paste";
- For "BENZENE SULPHOHYDRAZIDE" read "BENZENESULPHONYL HYDRAZIDE";
- For "2-DIAZO-1-NAPHTHOL-4-SULPHOCHLORIDE" read "2-DIAZO-1-NAPHTHOL-4-SULPHONYL CHLORIDE";
- For "2-DIAZO-1-NAPHTHOL-5-SULPHOCHLORIDE" read "2-DIAZO-1-NAPHTHOL-5-SULPHONYL CHLORIDE";
- For "DIPHENYLOXIDE-4,4'-DISULPHOHYDRAZIDE" read "DIPHENYLOXIDE-4,4'-DISULPHONYL HYDRAZIDE";

At the end of the list, under "Remarks", add:

"(9) This entry applies to mixtures of esters of 2-diazo-1-naphthol-4-sulphonic acid and 2-diazo-1-naphthol-5-sulphonic acid meeting the criteria of 2.4.2.3.3.2(d).".

CHAPTER 2.5

2.5.3.2.4 In the list of Organic Peroxides, for each organic peroxide which has, in the column "Number (Generic entry)", the word "exempt", add in the last column "(29)" as a reference to a new remark to be added at the end of the table which will read as follows:

"29) *Not subject to the requirements of these Model Regulations for Division 5.2.*".

Add the following entries:

ORGANIC PEROXIDE	Conc (%)	Diluent type A (%)	Diluent type B (%) 1)	Inert Solid (%)	Water (%)	Packing Method	Control Temp. (°C)	Emerg. Temp. (°C)	Number (Generic entry)	Subsidiary risks and Remarks
DIISOPROPYL PEROXYDICARBONATE	28	72				OP7	- 15	- 5	3115	
PEROXYACETIC ACID, DISTILLED, TYPE F, stabilized	41					M	+ 30	+ 35	3119	13) 30)

Add a new remark at the end of the table to read as follows:

"30) *Formulation derived from distillation of peroxyacetic acid originating from peroxyacetic acid in concentration of not more than 41% with water, total active oxygen (Peroxyacetic acid+H₂O₂) £ 9.5%, which fulfills the criteria of 2.5.3.3.2 (f).*".

CHAPTER 2.6

2.6.3.1.3 Replace the existing 2.6.3.1.3 with the following text:

"Diagnostic specimens are any human or animal material, including, but not limited to, excreta, secreta, blood and its components, tissue and tissue fluids being transported for diagnostic or investigation purposes, but excluding live infected animals.

Diagnostic specimens shall be assigned to UN 3373 unless the source patient or animal has or may have a serious human or animal disease which can be readily transmitted from one individual to another, directly or indirectly, and for which effective treatment and preventive measures are not usually available, in which case they shall be assigned to UN 2814 or UN 2900.

NOTE 1: *Blood which has been collected for the purpose of blood transfusion or for the preparation of blood products, and blood products and any tissues or organs intended for use in transplants are not regarded as dangerous goods for transport.**

* Suggestion of the secretariat: "... are not subject to these Model Regulations".

NOTE 2: *Assignment to UN 2814 or UN 2900 should [shall ?] be based on known medical history of the patient or animal, endemic local conditions, symptoms of the patient or animal, or professional judgement concerning individual circumstances of the patient or animal."*

2.6.3.3 Amend the title to read: "**Biological products**".

2.6.3.3.2 and

2.6.3.3.3 Delete.

CHAPTER 2.8

2.8.1 At the end of the definition, delete: "; they may also cause other hazards".

2.8.2.2 Replace the reference to footnote "1/" with "(see 2.8.2.3)".

Delete footnote 1/ and renumber footnote 2/ and references thereto accordingly.

2.8.2.3 Insert the text of footnote 1 as a new 2.8.2.3 and renumber the following paragraphs accordingly.

CHAPTER 3.1

3.1.2.6 and
3.1.2.7

Insert new paragraphs 3.1.2.6 and 3.1.2.7 to read as follows:

"3.1.2.6 Except for self-reactive substances and organic peroxides and unless it is already included in capital letters in the name indicated in the Dangerous Goods List, the word STABILIZED shall be added as part of the proper shipping name of a substance which without stabilization would be forbidden from transport in accordance with 1.1.3 due to it being liable to dangerously react under conditions normally encountered in transport (e.g.: "TOXIC LIQUID, ORGANIC, N.O.S., STABILIZED").

When temperature control is used to stabilize such substances to prevent the development of any dangerous excess pressure, then:

- (a) For liquids: where the SADT is less than 50 °C, the provisions of 7.1.4 shall apply;
- (b) For gases: the conditions of transport shall be approved by the competent authority.

3.1.2.7 Hydrates may be included under the proper shipping name for the anhydrous substance."

Renumber sub-section 3.1.2.6 as "3.1.2.8" accordingly and amend it to read as follows:

"3.1.2.8 *Generic or "not otherwise specified" (N.O.S.) names*

3.1.2.8.1 Generic and "not otherwise specified" proper shipping names that are assigned to special provision 274 in Column 6 of the Dangerous Goods List shall be supplemented with their technical or chemical group names unless a national law or international convention prohibits its disclosure if it is a controlled substance. For explosives of Class 1, the dangerous goods description may be supplemented by additional descriptive text to indicate commercial or military names. Technical and chemical group names shall be entered in brackets immediately following the proper shipping name. An appropriate modifier, such as "contains" or "containing" or other qualifying words such as "mixture", "solution", etc. and the percentage of the technical constituent may also be used. For example: "UN 1993 Flammable liquid, n.o.s. (contains xylene and benzene), 3, PG II".

3.1.2.8.1.1 The technical name shall be a recognized chemical or other name currently used in scientific and technical handbooks, journals and texts. Trade names shall not be used for this purpose. In the case of pesticides, only ISO common name(s), other name(s) in the WHO Recommended Classification of Pesticides by Hazard and Guidelines to Classification, or the name(s) of the active substance(s) may be used.

3.1.2.8.1.2 When a mixture of dangerous goods is described by one of the "N.O.S." or "generic" entries to which special provision 274 has been allocated in the Dangerous Goods List, not more than the two constituents which most predominantly contribute to the hazard or hazards of a mixture need to be shown, excluding controlled substances when their disclosure is prohibited by national law or international convention. If a package containing a mixture is labelled with any subsidiary risk label, one of the two technical names shown in brackets shall be the name of the constituent which compels the use of the subsidiary risk label.

3.1.2.8.1.3 Examples illustrating the selection of the proper shipping name supplemented with the technical name of goods for such N.O.S. entries are:

UN 2003 METAL ALKYL, WATER-REACTIVE, N.O.S. (trimethylgallium)
UN 2902 PESTICIDE, LIQUID, TOXIC, N.O.S. (drazoxolon)."

CHAPTER 3.2

3.2.1 Under the explanation of Column 2, delete "of organic substances" in the last sentence.

Dangerous Goods List

In the Dangerous Goods List, when the same UN number applies to both the liquid and solid form of a substance, the liquid entry is always to be listed first.

Wherever they appear in Column 6 of the Dangerous Goods List, delete special provisions "15", "18", "78", "107", "109", "222", "265" and "268".

Wherever it appears throughout Chapter 3.2:

- For all substances assigned to IBC08, packing group III : apply B3;
- For all substances assigned to IBC08, packing groups I or II : apply B4;
- For all substances assigned to IBC08, packing group III (other than those of Division 4.3): delete B4;
- For all substances assigned to IBC08 delete B3 when B4 is also applied.

Column (7) (Limited quantities): Amend the limits indicated in this column in accordance with the following criteria:

- Class 3, packing group II: General limit 1L except for UN numbers: 1133, 1139, 1169, 1197, 1210, 1263, 1266, 1287, 1306, 1866, 1999, 3065 and 3269 for which the limit will be 5 L;
- Division 4.1, packing group II, for substances currently authorized to be transported as limited quantities only: 1 kg;
- Division 4.1, packing group III, for substances currently authorized to be transported as limited quantities only: 5 kg;
- Division 5.1, packing group II: 1 L (for liquids); 1 kg (for solids);
- Division 5.1, packing group III: 5 L (for liquids); 5 kg (for solids);
- Division 6.1, packing group III: 5 L (for liquids); 5 kg (for solids);
- Class 8, packing group II: 1 L (for liquids); 1 kg (for solids);
- Class 8, packing group III: 5 L (for liquids); 5 kg (for solids);
- Class 9, packing group III: 5 L (for liquids); 5 kg (for solids).

Add the following new entries:

UN No.	Name and description	Class or Division	Subsidiary risk	UN packing group	Special provisions	Limited quantities	Packagings and IBCs		Portable tanks	
							Packing instruction	Special provision	Portable tank instruction	Portable tank special provisions (11)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1153	ETHYLENE GLYCOL DIETHYL ETHER	3		II		1 L	P001 IBC02		T4	TP1
1372	FIBRES, ANIMAL or FIBRES, VEGETABLE burnt, wet or damp	4.2		III	117	NONE	P410			
1387	WOOL WASTE, WET	4.2		III	117	NONE	P410			
1856	RAGS, OILY	4.2			29 117	NONE	P003 IBC08	PP19 B6		
1857	TEXTILE WASTE, WET	4.2		III	117	NONE	P410			
3359	FUMIGATED UNIT	9			302	NONE	NONE			
3360	FIBRES, VEGETABLE, DRY	4.1			29 117 299	NONE	P003	PP19		
3361	CHLOROSILANES, TOXIC, CORROSIVE, N.O.S.	6.1	8	II		NONE	P001 IBC01		T11	TP2 TP13
3362	CHLOROSILANES, TOXIC, CORROSIVE, FLAMMABLE, N.O.S.	6.1	3, 8	II		NONE	P001 IBC01		T11	TP2 TP13
3363	DANGEROUS GOODS IN MACHINERY or DANGEROUS GOODS IN APPARATUS	9			301	NONE	P907			
3364	TRINITROPHENOL (PICRIC ACID), WETTED, with not less than 10% water by mass	4.1		I		NONE	P406	PP24		
3365	TRINITROCHLORO- BENZENE (PICRYL CHLORIDE), WETTED, with not less than 10% water by mass	4.1		I		NONE	P406	PP24		
3366	TRINITROTOLUENE (TNT), WETTED, with not less than 10% water by mass	4.1		I		NONE	P406	PP24		
3367	TRINITROBENZENE, WETTED, with not less than 10% water by mass	4.1		I		NONE	P406	PP24		
3368	TRINITROBENZOIC ACID, WETTED, with not less than 10% water by mass	4.1		I		NONE	P406	PP24		

UN No.	Name and description	Class or Division	Subsidiary risk	UN packing group	Special provisions	Limited quantities	Packagings and IBCs		Portable tanks	
							Packing instruction	Special provision	Portable tank instruction	Portable tank special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
3369	SODIUM DINITRO-o-CRESOLATE, WETTED, with not less than 10% water by mass	4.1		I		NONE	P406	PP24		
3370	UREA NITRATE, WETTED, with not less than 10% water by mass	4.1		I		NONE	P406	PP78		
3371	2-METHYLBUTANAL	3		II		1L	P001 IBC02		T4	TP1
3372	ORGANOMETALLIC COMPOUND, SOLID, WATER-REACTIVE, FLAMMABLE, N.O.S.	4.3	4.1	I	274	NONE	P403 IBC04			
		4.3	4.1	II	274	500 g	P410 IBC04			
		4.3	4.1	III	223 274	1 kg	P410 IBC06			
3373	DIAGNOSTIC SPECIMENS	6.2				NONE	P650			
3374	ACETYLENE, SOLVENT FREE	2.1					P200	PP23		

Amend the following entries to read:

UN No.	Name and description	Class or Division	Subsidiary risk	UN packing group	Special provisions	Limited quantities	Packagings and IBCs		Portable tanks	
							Packing instruction	Special provision	Portable tank instruction	Portable tank special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
0503	AIR-BAG INFLATORS, or AIR-BAG MODULES, [or GAS GENERATORS FOR SEAT BELTS] or SEAT-BELT PRETENSIONERS	1.4G			235 289	NONE	P135			
1942	AMMONIUM NITRATE, with not more than 0.2% total combustible material, including any organic substance, calculated as carbon to the exclusion of any other added substance.	5.1			306					
2030	HYDRAZINE AQUEOUS SOLUTION, with not less than 37% hydrazine, by mass	8	6.1	I	298	NONE			T20	TP2 TP13
		8	6.1	II		1 L			T15	TP2 TP13
		8	6.1	III		5 L			T4	TP2
2067	AMMONIUM NITRATE BASED FERTILIZER	5.1			186 306 307					
2071	AMMONIUM NITRATE BASED FERTILIZER	9			186 193					
3268	AIR-BAG INFLATORS, or AIR-BAG MODULES, [or GAS GENERATORS FOR SEAT BELTS] or SEAT-BELT PRETENSIONERS	9		III	280 289	NONE	P902 LP902			

Amend the following entries as follows:

UN 0015 Delete "8" in column (4);

UN 0016 Delete "8" in column (4);

UN 0223 Delete this entry;

UN 0303 Delete "8" in column (4);

UN 0331 Add "(AGENT, BLASTING, TYPE B)" in column (2) (English text only);

UN 0332 Add "(AGENT, BLASTING, TYPE B)" in column (2) (English text only);

- UN 1040 Add "PP79" in column (9);
- UN 1057 In column (2), delete "(cigarettes)";
- UN 1062 Amend the name in column (2) to read as follows:
"METHYL BROMIDE with not more than 2% chloropicrin";
- UN 1133 For packing group I: replace "NONE" with "500 ml" in column (7);
For packing group II: replace "1 L" with "5 L" in column (7);
- UN 1139 For packing group I: replace "NONE" with "500 ml" in column (7);
For packing group II: replace "1 L" with "5 L" in column (7);
- UN 1169 For packing group II: replace "1 L" with "5 L" in column (7);
- UN 1177 Amend the name in column (2) to read "2-ETHYLBUTYL ACETATE";
- UN 1197 For packing group II: replace "1 L" with "5 L" in column (7);
- UN 1210 For packing group I: replace "NONE" with "500 ml" in column (7);
For packing group II: replace "1 L" with "5 L" in column (7);
- UN 1263 For packing group I: replace "NONE" with "500 ml" in column (7);
For packing group II: replace "1 L" with "5 L" in column (7);
- UN 1266 For packing group II: replace "1 L" with "5 L" in column (7);
- UN 1267 For packing group I: replace "NONE" with "500 ml" in column (7);
- UN 1268 For packing group I: replace "NONE" with "500 ml" in column (7);
- UN 1278 Amend the name in column (2) to read "1-CHLOROPROPANE";
- UN 1287 For packing group II: replace "1 L" with "5 L" in column (7);
- UN 1306 For packing group II: replace "1 L" with "5 L" in column (7);
- UN 1347 Add special provision "28" in column (6);
- UN 1357 Add special provision "28" in column (6);
- UN 1374 Insert in column (6), special provision "300";
- UN 1381 Insert "TP31" in column (11);
- UN 1422 Insert "TP31" in column (11);

- UN 1428 Insert "TP31" in column (11);
- UN 1556 For packing group I: insert "T14" in column (10) and "TP2", "TP9", "TP13" and "TP27" in column (11);
- For packing group II: insert "T11" in column (10) and insert "TP2", "TP13" and "TP27" in column (11);
- For packing group III: insert "T7" in column (10) and insert "TP2" and "TP28" in column (11);
- UN 1571 Add special provision "28" in column (6);
- UN 1579 Add "T4" and "TP1" in column (10) and (11) respectively;
- UN 1581 Amend the name in column (2) to read as follows:
- "CHLOROPICRIN AND METHYL BROMIDE MIXTURE with more than 2% chloropicrin";
- UN 1702 Amend the name in column (2) to read as follows:
- "1,1,2,2-TETRACHLOROETHANE";
- UN 1841 Replace "NONE" with "5 kg" in column (7);
- UN 1863 For packing group I: replace "NONE" with "500 ml" in column (7) and add "TP28" in column (11);
- UN 1866 For packing group I: replace "NONE" with "500 ml" in column (7) and add "TP28" in column (11);
- For packing group II: replace "1 L" with "5 L" in column (7);
- UN 1906 Add "TP28" in column (11);
- UN 1993 For packing group I: Add "TP27" in column (11);
- UN 1999 For packing group II: replace "1 L" with "5 L" in column (7);
- UN 2037 Delete special provision "63" in column (6) add special provision "303";
- UN 2068 Delete this entry;
- UN 2069 Delete this entry;
- UN 2070 Delete this entry;
- UN 2072 Delete this entry;
- UN 2212 Replace "NONE" with "1kg" in column (7);

- UN 2216 Insert special provisions "300" and "308" in column (6);
- UN 2249 Add "3" in column (4);
- UN 2257 Insert "TP31" in column (11);
- UN 2264 Amend the name in column (2) to read "N, N-DIMETHYLCYCLOHEXYLAMINE";
- UN 2277 Amend the name in column (2) to read: "ETHYL METHACRYLATE, STABILIZED";
- UN 2315 Add special provision "305" in column (6) and insert "1L" in column (7);
- UN 2531 Insert "TP30" in column (11);
- UN 2571 Add "TP28" in column (11);
- UN 2579 Insert "TP30" in column (11);
- UN 2672 Add new special provision "B11" in column (9);
- UN 2680 Amend the name in column (2) to read: "LITHIUM HYDROXIDE";
- UN 2684 Amend the name in column (2) to read: "3-DIETHYLAMINOPROPYLAMINE";
- UN 2740 Insert "T20" in column (10) and insert "TP2" and "TP13" in column (11);
- UN 2793 Delete special provision "107" in column (6) and add special provision "223";
- UN 2797 Add "TP28" in column (11);
- UN 2852 Add special provision "28" in column (6);
- UN 2870 Delete special provision "78" in column (6);
- UN 2880 Amend the proper shipping name in column (2) to read:
"CALCIUM HYPOCHLORITE, HYDRATED, or CALCIUM HYPOCHLORITE,
HYDRATED MIXTURE, with not less than 5.5% but not more than 16% water";
- UN 2907 Add "B12" and "PP80" in column (9);
- UN 2969 Replace "NONE" with "5 kg" in column (7);
- UN 3027 Delete the portable tank instructions in columns (10) and (11);
- UN 3028 Add special provision "304" in column (6);
- UN 3052 For the solid entry, delete the portable tank instructions in columns (10) and (11);
- UN 3065 For packing group II: replace "1 L" with "5 L" in column (7);

- UN 3151 Add special provision "305" in column (6) and replace "NONE" with "1 L" in column (7);
- UN 3152 Add special provision "305" in column (6) and replace "NONE" with "1kg" in column (7);
- UN 3166 Amend the name in column (2) to read as follows:

"ENGINE, INTERNAL COMBUSTION or VEHICLE, FLAMMABLE GAS, POWERED
or VEHICLE, FLAMMABLE LIQUID, POWERED";
- UN 3221 Replace "NONE" with "25 ml" in column (7);
- UN 3222 Replace "NONE" with "100 g" in column (7);
- UN 3223 Replace "NONE" with "25 ml" in column (7);
- UN 3224 Replace "NONE" with "100 g" in column (7);
- UN 3225 Replace "NONE" with "125 ml" in column (7);
- UN 3226 Replace "NONE" with "500 g" in column (7);
- UN 3227 Replace "NONE" with "125 ml" in column (7);
- UN 3228 Replace "NONE" with "500 g" in column (7);
- UN 3229 Replace "NONE" with "125 ml" in column (7);
- UN 3230 Replace "NONE" with "500 g" in column (7);
- UN 3250 Add "TP28" in column (11);
- UN 3269 For packing group II: replace "1 L" with "5 L" in column (7);
- UN 3270 Replace "NONE" with "500 g" in column (7);
- UN 3279 For packing group I: add TP 27 in column (11);
- UN 3295 For packing group I: replace "NONE" with "500 ml" in column (7) and add "TP28" in column (11);
- UN 3344 Add "PP80" in column (9);
- UN 3353 Delete this entry;

CHAPTER 3.3

- SP15 Delete.
- SP18 Delete.
- SP 29 Delete the words "and the packing group" at the end of the sentence.

- SP 63 Amend to read as follows:
- "The division of Class 2 and the subsidiary risks depend on the nature of the contents of the aerosol. The following provisions shall apply:
- (a) Division 2.1 applies if the contents include more than 45% by mass, or more than 250 g of flammable components. Flammable components are gases which are flammable in air at normal pressure or substances or preparations in liquid form which have a flash point less than or equal to 100 °C;
 - (b) Division 2.2 applies when the contents do not meet the above criteria for Division 2.1;
 - (c) Gases of Division 2.3 shall not be used as a propellant in an aerosol;
 - (d) Where the contents other than the propellant of aerosols to be ejected are classified as Division 6.1 packing groups II or III or Class 8 packing groups II or III, the aerosol shall have a subsidiary risk of Division 6.1 or Class 8;
 - (e) Aerosols with contents meeting the criteria for packing group I for toxicity or corrosivity shall be prohibited from transport;
 - (f) Subsidiary risk labels may be required for air transport."
- SP 78 Delete.
- SP 107 Delete.
- SP 109 Delete.
- SP 117 Delete the two last sentences.
- SP 119 Amend the last sentence to read: "Refrigerating machines and refrigerating machine components are not subject to these Regulations if they contain less than 12 kg of gas in Division 2.2 or less than 12 litres ammonia solution (UN 2672)."
- SP 162 Replace "23 °C with "60.5 °C".
- SP 190 Delete the first sentence.
- SP 191 Replace "see Special Provision 190" with "Receptacles with a capacity not exceeding 50 ml containing only non-toxic constituents are not subject to these Regulations."
- SP 193 Amend to read as follows:
- "This entry may only be used for uniform ammonium nitrate based fertilizer mixtures of the nitrogen, phosphate or potash type, containing not more than 70% ammonium nitrate and not more than 0.4% total combustible/organic material calculated as carbon or with not more than 45% ammonium nitrate and unrestricted combustible material. Fertilizers within these composition limits are only subject to these Regulations when transported by air or sea and are not subject to these Regulations if shown by a Trough Test (see *Manual*

of Tests and Criteria, Part III, sub-section 38.2) not to be liable to self-sustaining decomposition."

SP 196 Amend to read as follows:

"Formulations which in laboratory testing neither detonate in the cavitated state nor deflagrate, which show no effect when heated under confinement and which exhibit no explosive power may be transported under this entry. The formulation must also be thermally stable (i.e. the SADT is 60 °C or higher for a 50 kg package). Formulations not meeting these criteria shall be transported under the provisions of Division 5.2; see 2.5.3.2.4."

SP 216 Amend the end of the paragraph to read:

"Each transport unit shall be leakproof when used as a bulk packaging. Sealed packets containing less than 10 ml of a packing group II or III flammable liquid absorbed into a solid material are not subject to these Regulations provided there is no free liquid in the packet."

SP 217 and 218 Replace the sentence "Each transport unit shall be leakproof." with "Each transport unit shall be leakproof when used as a bulk packaging."

SP 222 Delete.

SP 227 Delete the first sentence.

SP 235 Amend to read as follows:

"This entry applies to articles which contain Class 1 explosive substances and which may also contain dangerous goods of other classes. These articles are used as life-saving vehicle air-bag inflators or air-bag modules [or gas generators for seat belts] or seat-belt pretensioners."

SP 251 Add the following text:

"Chemical kits and first aid kits containing dangerous goods in inner packagings which do not exceed the quantity limits applicable to individual substances as specified in Column 7 of the Dangerous Goods List may be transported in accordance with Chapter 3.4."

SP 265 Delete.

SP 268 Delete.

SP 280 Amend to read as follows:

"This entry applies to articles which are used as life-saving vehicle air-bag inflators, or air-bag modules [or gas generators for seat belts] or seat-belt pretensioners and which contain dangerous goods of Class 1 or dangerous goods of other classes and 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 *Manual of Tests and Criteria*, with no

explosion of the device, no fragmentation of device casing or pressure vessel, and no projection hazard nor thermal effect which would significantly hinder fire-fighting or other emergency response efforts in the immediate vicinity."

SP 291 Amend the last sentence to read:

"Refrigerating machines and refrigerating-machine components are not subject to these Regulations if they contain less than 12 kg of gas."

SP 297 Amend the first paragraph to read:

"For air transport, arrangements between consignor and operator(s) shall be made for each consignment, to ensure that ventilation safety procedures are followed."

Add the following new special provisions:

"298 Solutions with a flash point of 60.5 °C or less shall bear a flammable liquid label.

299 Consignments of COTTON, DRY having a density not less than 360 kg/m³ according to ISO 8115:1986 are not subject to these Regulations when transported in closed transport units.

300 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.

301 This entry only applies to machinery or apparatus containing dangerous substances as a residue or an integral element of the machinery or apparatus. It shall not be used for machinery or apparatus for which a proper shipping name already exists in the Dangerous Goods List. Machinery and apparatus transported under this entry shall only contain dangerous goods which are authorized to be transported in accordance with the provisions of Chapter 3.4 (Limited quantities). The quantity of dangerous goods in machinery or apparatus shall not exceed the quantity specified in Column 7 of the Dangerous Goods List for each item of dangerous goods contained. If the machinery or apparatus contains more than one item of dangerous goods, the individual substances shall not be capable of reacting dangerously with one another (see 4.1.1.6). When it is required to ensure liquid dangerous goods remain in their intended orientation, package orientation labels meeting the specifications of ISO 780:1985 shall be affixed on at least two opposite vertical sides with the arrows pointing in the correct direction.

The competent authority may exempt from regulation machinery or apparatus which would otherwise be transported under this entry. The transport of dangerous goods in machinery or apparatus where the quantity of dangerous goods exceeds the quantity specified in Column 7 of the Dangerous Goods List is authorized when approved by the competent authority.

302 In the proper shipping name, the word "UNIT" means:

a road freight vehicle;
a railway freight wagon;
a freight container;
a road tank vehicle;

a railway tank wagon; or
a portable tank.

Except when transported by sea, fumigated units are only subject to the requirements of 5.5.2.

- 303 The classification of UN 2037 shall be based on the gases contained therein and in accordance with the provisions of Chapter 2.
- 304 Batteries, dry, containing corrosive electrolyte which will not flow out of the battery if the battery case is cracked are not subject to these Regulations provided the batteries are securely packed and protected against short-circuits. Examples of such batteries are: alkali-manganese, zinc-carbon, nickel-metal hydride and nickel-cadmium batteries.
- 305 These substances are not subject to these Regulations when in concentrations of not more than 50 mg/kg.
- 306 This entry may only be used for substances that do not exhibit explosive properties of Class 1 when tested in accordance to Test Series 1 and 2 of Class 1 (see *Manual of Tests and Criteria*, Part I).
- 307 This entry may only be used for uniform mixtures containing ammonium nitrate as the main ingredient within the following composition limits:
- (a) Not less than 90 % ammonium nitrate with not more than 0.2% total combustible/organic material calculated as carbon and with added matter, if any, which is inorganic and inert towards ammonium nitrate ; or
 - (b) Less than 90% but more than 70% ammonium nitrate with other inorganic compatible materials or more than 80% but less than 90% ammonium nitrate mixed with calcium carbonate and/or dolomite and not more than 0.4% total combustible/organic material calculated as carbon; or
 - (c) Nitrogen type ammonium nitrate based fertilizers containing mixtures of ammonium nitrate and ammonium sulphate with more than 45% but less than 70% ammonium nitrate and not more than 0.4% total combustible/organic material calculated as carbon such that the sum of the percentage compositions of ammonium nitrate and ammonium sulphate exceeds 70%.
- 308 Fish scrap or fish meal shall contain at least 100 ppm of antioxidant (ethoxyquin) at the time of consignment."

CHAPTER 3.4

- 3.4.1 In the second sentence, add "for the inner packaging or article" after "The applicable quantity limit".

3.4.8 Insert the following paragraph and renumber existing 3.4.8 accordingly "3.4.9":

"3.4.8 Packages containing dangerous goods in limited quantities need not be marked with the proper shipping name of the contents, but shall be marked with the UN number of the contents (preceded by the letters "UN") placed within a diamond. The width of line forming the diamond shall be at least 2 mm; the number shall be at least 6 mm high. Where more than one substance assigned to different UN numbers are included in the package, the diamond shall be large enough to include each relevant UN number."

CHAPTER 4.1

Delete the Introductory notes (Notes 1 and 2).

4.1.1.1 Amend the end of the paragraph to read as follows:

"...,or by changes in temperature, humidity or pressure (resulting from altitude, for example). Packagings, including IBCs and large packagings, shall be closed in accordance with the information provided by the manufacturer. No dangerous residue shall adhere to the outside of packages, IBCs and large packagings during transport. These provisions apply, as appropriate, to new, reused, reconditioned or remanufactured packagings, and to new, reused, repaired or remanufactured IBCs, and to new or reused large packagings."

4.1.1.12(c) Amend to read:

"(c) after the repair or remanufacture of any IBC, before it is re-used for transport."

4.1.1.15 Add the following new paragraph:

"4.1.1.15 *Explosives, self-reactive substances and organic peroxides*

Unless specific provision to the contrary is made in these Regulations, the packagings, including IBCs and large packagings, used for goods of Class 1, self-reactive substances of Division 4.1 and organic peroxides of Division 5.2 shall comply with the provisions for the medium danger group (packing group II)."

Renumber following paragraph and sub-paragraphs accordingly.

4.1.1.16.1 (Former 4.1.1.15.1) Amend to read as follows:

"4.1.1.16.1 Damaged, defective, leaking or non-conforming packages, or dangerous goods that have spilled or leaked may be transported in salvage packagings mentioned in 6.1.5.1.11. This does not prevent the use of a bigger size packaging of appropriate type and performance level under the conditions of 4.1.1.16.2. "

4.1.2.5 Add a new 4.1.2.5 to read as follows:

"Except for routine maintenance of metal, rigid plastics and composite IBCs performed by the owner of the IBC, whose State and name or authorized symbol is durably marked on the IBC, the party performing routine maintenance shall durably mark the IBC near the manufacturer's UN design type marking to show:

- (a) The State in which the routine maintenance was carried out; and
- (b) The name or authorized symbol of the party performing the routine maintenance."

4.1.3.4 Amend the text concerning IBCs to read as follows:

"IBCs

For substances of packing group I:

All types of IBCs;

For substances of packing groups II and III:

Wooden: 11C, 11D and 11F

Fibreboard: 11G

Flexible: 13H1, 13H2, 13H3, 13H4, 13H5, 13L1, 13L2, 13L3, 13L4, 13M1 and 13M2

Composite: 11HZ2 and 21HZ2."

4.1.3.8 Add a new section 4.1.3.8 as follows:

"4.1.3.8 *Unpackaged articles other than Class 1 articles*

4.1.3.8.1 Where large and robust articles cannot be packaged in accordance with the requirements of Chapters 6.1 or 6.6 and they have to be transported empty, uncleaned and unpackaged, the competent authority may approve such transport. In doing so the competent authority shall take into account that:

- (a) Large and robust articles shall be strong enough to withstand the shocks and loadings normally encountered during transport including trans-shipment between transport units and between transport units and warehouses, as well as any removal from a pallet for subsequent manual or mechanical handling;
- (b) All closures and openings shall be sealed so that there can be no loss of contents which might be caused under normal conditions of transport, by vibration, or by changes in temperature, humidity or pressure (resulting from altitude, for example). No dangerous residue shall adhere to the outside of the large and robust articles;
- (c) Parts of large and robust articles, which are in direct contact with dangerous goods:
 - (i) shall not be affected or significantly weakened by those dangerous goods; and
 - (ii) shall not cause a dangerous effect e.g. catalysing a reaction or reacting with the dangerous goods;
- (d) Large and robust articles containing liquids shall be stowed and secured to ensure that neither leakage nor permanent distortion of the article occurs during transport;
- (e) They shall be fixed in cradles or crates or other handling devices in such a way that they will not become loose during normal conditions of transport.

4.1.3.8.2 Unpackaged articles approved by the competent authority in accordance with the provisions of 4.1.10.1 shall be subject to the consignment procedures of Part 5. In addition the consignor of such articles shall ensure that a copy of any such approval is transported with the large and robust articles.

***NOTE:** A large and robust article may include flexible fuel containment systems, military equipment, machinery or equipment containing dangerous goods above the limited quantity thresholds."*

4.1.4.1 Add "plywood (1D)" in the column "Outer packagings" under "Drums" for packing instructions P112 (a), P112 (b), P112 (c), P113, P116, P130, P131, P134, P135, P136, P138, P140, P141 and P142.

Add "plastics, removable head (1H2)" in the column "Outer packagings" under "Drums" for packing instructions P112(c), P113, P115, P134, P138 and P140.

Add "fibreboard (1G)" in the column "Outer packagings" under "Drums" for packing instructions P134 and P138.

Add "steel, removable head (1A2)", "aluminium, removable head (1B2)" and "plastics, removable head (1H2)" in the column "Outer packagings" under "Drums" for packing instruction P144.

Add "aluminium (4B)" in the column "Outer packagings" under "Boxes" for packing instructions P112 (c) and P113.

Add "plastics, solid (4H2)" in the column "Outer packagings" under "Boxes" for packing instruction P144.

P002: In PP11 under the heading "Special packing provisions", replace "or" with "and" after "plastics bags".

P003: In PP19 under the heading "Special packing provisions", add "1856" and "3360".

P200: Under "Special packing provisions" add a new packing provision to read:

"PP79 UN 1040 ethylene oxide may also be packed in hermetically sealed glass or metal inner packagings suitably cushioned in fibreboard, wooden or metal boxes meeting the packing group I performance level. The maximum quantity permitted in any glass inner packaging is 30 g, and the maximum quantity permitted in any metal inner packaging is 200 g. After filling, each inner packaging shall be determined to be leak-tight by placing the inner packaging in a hot water bath at a temperature, and for a period of time, sufficient to ensure that an internal pressure equal to the vapour pressure of ethylene oxide at 55 °C is achieved. The total quantity in any outer packaging shall not exceed 2.5 kg."

Add the following entry to the table of gases:

UN No	Name and description	Type of receptacles	Test pressure x Working pressure	MPa	Test period	Filling	Special requirements
3374	ACETYLENE, SOLVENT FREE	(1),(2),(3),(4),(5)		6.0	5		c,i

Amend special requirements "c" and "i" to read:

"c: Metal parts in contact with the contents shall not contain more than 65% copper (see ISO 11114-1) [ISO 3807-1 and ISO 3807-2].";

"i: The maximum filling degree shall be in accordance with the figures specified in the approval [of the monolithic porous mass].".

P401: Amend as follows:

Delete : "3) Steel drums (1A1) with a maximum capacity of 250 litres".

P406: Amend the special provision PP24 to read as follows:

"UN Nos 2852, 3364, 3365, 3366, 3367, 3368 and 3369 shall not be transported in quantities of more than 500 g per package.".

Add the following new special provisions PP78 and PP80 to read as follows:

"PP78 UN 3370 shall not be transported in quantities of more than 11.5 kg per package.";

"PP80 For UN Nos 2907 and 3344, packagings shall meet the packing group II performance level. Packagings meeting the test criteria of packing group I shall not be used.".

P601 and

P602: Add at the end of the first sentence, after "and 4.1.3 are met": "and the packagings are hermetically sealed:".

P601: Under (3) "Combination packagings", add the following text after (e):

"(f) The outer and inner packagings shall be subjected periodically to a leakproofness test according to (b) at intervals of not more than two and a half years; and

(g) The outer and inner packagings shall bear in clearly legible and durable characters :

(i) the date (month, year) of the initial testing and the latest periodical test;

(ii) the name or authorized symbol of the party performing the tests and inspections.".

P650: Insert the following new packing instruction:

P650	PACKING INSTRUCTION	P650
This instruction applies to UN 3373.		
General provisions		
<p>Diagnostic specimens shall be packed in good quality packagings, which shall be strong enough to withstand the shocks and loadings normally encountered during transport, including trans-shipment between transport units and between transport units and warehouses as well as any removal from a pallet or overpack for subsequent manual or mechanical handling. Packagings shall be constructed and closed so as to prevent any loss of contents when prepared for transport which might be caused under normal conditions of transport, by vibration, or by changes in temperature, humidity or pressure.</p> <p>Primary receptacles shall be packed in secondary packagings in such a way that, under normal conditions of transport, they cannot break, be punctured or leak their contents into the secondary packaging. Secondary packagings shall be secured in outer packagings with suitable cushioning material. Any leakage of the contents shall not substantially impair the protective properties of the cushioning material or of the outer packaging.</p> <p>For transport each package shall be clearly and durably marked with the words "DIAGNOSTIC SPECIMENS".</p> <p>The completed package shall be capable of successfully passing the drop test in 6.3.2.5 as specified in 6.3.2.3 and 6.3.2.4 except that the height of the drop shall not be less than 1.2 m.</p>		
For Liquids		
<p>The primary receptacle(s) shall be leakproof and shall not contain more than 500 ml.</p> <p>There shall be absorbent material placed between the primary receptacle and the secondary packaging; if several fragile primary receptacles are placed in a single secondary packaging, they shall be either individually wrapped or separated so as to prevent contact between them. The absorbent material, such as cotton wool, shall be in sufficient quantity to absorb the entire contents of the primary receptacles and there shall be a secondary packaging which shall be leakproof.</p> <p>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 (0.95 bar).</p> <p>The outer packaging shall not contain more than 4 litres.</p>		
For Solids		
<p>The primary receptacle(s) shall be siftproof and shall not contain more than 500 g.</p> <p>If several fragile primary receptacles are placed in a single secondary packaging, they shall be either individually wrapped or separated so as to prevent contact between them and there shall be a secondary packaging which shall be leakproof.</p> <p>The outer packaging shall not contain more than 4 kg.</p> <p>Provided that diagnostic specimens are packed in accordance with this packing instruction, no other requirements of these Model Regulations shall apply.</p>		

P902: Amend packing instruction **P902** to read as follows:

P902	PACKING INSTRUCTION	P902
This instruction applies to UN 3268.		
The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 are met:		
Packagings conforming to the packing group III performance level. The packagings shall be designed and constructed to prevent movement of the articles and inadvertent operation during normal conditions of transport.		
The articles may also be transported unpackaged in dedicated handling devices, vehicles, containers or wagons when moved from where they are manufactured to an assembly plant.		
Additional requirement:		
Any pressure vessel shall be in accordance with the requirements of the competent authority for the substance(s) contained in the pressure vessel(s).		

P907: Insert the following new packing instruction to read:

P907	PACKING INSTRUCTION	P907
If the machinery or apparatus is constructed and designed so that the receptacles containing the dangerous goods are afforded adequate protection, an outer packaging is not required. Dangerous goods in machinery or apparatus shall otherwise 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 meeting the applicable requirements of 4.1.1.1 .		
Receptacles containing dangerous goods shall conform to the general provisions in 4.1.1, except that 4.1.1.3, 4.1.1.4, 4.1.1.12 and 4.1.1.14 do not apply. For Division 2.2 gases, the inner cylinder or receptacle, its contents and filling density shall be to the satisfaction of the competent authority of the country in which the cylinder or receptacle is filled.		
In addition, the manner in which receptacles are contained within the machinery or apparatus, shall be such that under normal conditions of transport, damage to receptacles containing the dangerous goods is unlikely; and in the event of damage to receptacles containing solid or liquid dangerous goods, no leakage of the dangerous goods from the machinery or apparatus is possible (a leakproof liner may be used to satisfy this requirement). Receptacles containing dangerous goods shall be so installed, secured or cushioned as to prevent their breakage or leakage and so as to control their movement within the machinery or apparatus during normal conditions of transport. Cushioning material shall not react dangerously with the content of the receptacles. Any leakage of the contents shall not substantially impair the protective properties of the cushioning material.		

4.1.4.2 Amend IBC special packing provisions **B3** and **B4** to read as follows:

"B3 Flexible IBCs shall be sift-proof and water resistant or shall be fitted with a sift-proof and water resistant liner.";

"B4 Flexible, fibreboard or wooden IBCs shall be sift-proof and water resistant or shall be fitted with a sift-proof and water resistant liner.".

IBC03: Add a new special provision B11 to read as follows:

"B11: UN 2672 Ammonia solution in concentrations up to 25% may be transported in rigid or composite plastics IBCs (31H1, 31H2 and 31HZ1).".

IBC06: Add a new special provision B12 to read as follows:

"B12 For UN 2907, IBCs shall meet the packing group II performance level. IBCs meeting the test criteria of packing group I shall not be used.".

Under "(3) Composite" delete "31HZ2".

4.1.4.3 **LP902:** Add a new packing instruction to read:

LP902	PACKING INSTRUCTION	LP902
	This instruction applies to UN 3268.	
	The following packagings are authorized, provided the general provisions of 4.1.1 and 4.1.3 are met: Packagings conforming to the packing group III performance level. The packagings shall be designed and constructed to prevent movement of the articles and inadvertent operation during normal conditions of transport. The articles may also be transported unpackaged in dedicated handling devices, vehicles, containers or wagons when moved from where they are manufactured to an assembly plant.	
	Additional requirement: Any pressure vessel shall be in accordance with the requirements of the competent authority for the substance(s) contained in the pressure vessel(s).	

CHAPTER 4.2

4.2.1.4 Replace "dangerous goods" with "substances".

4.2.1.9 Amend the title to read "Degree of filling".

4.2.1.9.1, 4.2.2.7.1

and 4.2.3.6.1 Replace "weaken the material" with "weaken these materials".

- 4.2.1.9.1.1 Amend the end of the sentence to read as follows:
- "in the applicable portable tank instructions or special provisions in 4.2.4.2.6 or 4.2.4.3 and Columns 10 or 11 of the Dangerous Goods List."
- 4.2.1.9.6 (b) Replace "goods" with "substances".
- 4.2.1.13.1 In the last sentence, replace "special requirement" with "additional provision".
- 4.2.1.13.2
and 4.2.1.13.3 Replace "requirements" with "provisions" (3 times).
- 4.2.1.13.6 Replace "the properties of the substance peroxide" with "the properties of the substance".
- 4.2.1.13.8 In the formula, amend " T_{PO} " to read "T" and in the text under the formula, delete "[-]", replace "vessels" with "shells" (twice) and amend:
- T_{PO} = temperature of peroxide at relieving conditions" to read
"T = temperature of substance at relieving conditions"
- In the last sentence, add "portable" before "tank".
- 4.2.2.5
and 4.2.3.4 Replace "dangerous goods" with "gas(es)".
- 4.2.3.2 Amend the end of the sentence to read as follows:
- "... assigned to each substance in Column 11 of the Dangerous Goods List and described in 4.2.4.3."
- 4.2.3.7 Renumber the paragraph under the title as "4.2.3.7.1" and the following one (now 4.2.3.7.1) as "4.2.3.7.2".
- 4.2.3.9 Delete ", as appropriate,".
- 4.2.4.2.1 Replace "requirements" with "provisions" (3 times) and amend the end of the paragraph to read "... to the general provisions of this Chapter and the general requirements of Chapter 6.7."
- 4.2.4.2.5 In the text before the table, replace "wall thicknesses" with "shell thicknesses".
- In the table, for portable tank instruction T5, under "Portable tank instructions also permitted", delete "T12", "T16" and "T18".
- 4.2.4.2.6 In the table of portable tank instruction **T23**:
- Amend the title of the 7th column to read "Degree of filling" and footnote **/ (page 368 of the English version) to read: "Maximum quantity per portable tank: 2000 kg";

Add the following entry under UN 3119:

UN No	Substance	Minimum test pressure (bar)	Minimum shell thickness (mm-reference steel)	Bottom opening requirements	Pressure relief requirements	Degree of filling	Contr. temp.	Emerg temp.
	Peroxyacetic acid, distilled, type F, stabilized **/						+ 30 °C	+ 35 °C

Add a new footnote (page 369 of the English version) to read as follows:

***/ Formulation derived from distillation of peroxyacetic acid originating from peroxyacetic acid in concentration of not more than 41% with water, total active oxygen (peroxyacetic acid+H₂O₂) £9.5%, which fulfils the criteria of 2.5.3.3.2 (f)".*

In the table of portable tank instruction **T50** amend the title of the 6th column to read "Maximum filling density" and change:

The values of maximum filling density for:

R 404 A	from 0.82 kg/l to 0.84 kg/l
R 407 A	from 0.94 kg/l to 0.95 kg/l
R 407 B	from 0.93 kg/l to 0.95 kg/l

The values of maximum allowable working pressure for:

R 404 A	Small		none		none
	Bare	from	28.2 bar	to	28.3 bar
	Sunshield	from	25.2 bar	to	25.3 bar
	Insulated	from	22.1 bar	to	22.5 bar
R 407 A	Small	from	32.3 bar	to	31.3 bar
	Bare	from	29.0 bar	to	28.1 bar
	Sunshield	from	25.7 bar	to	25.1 bar
	Insulated		none		none
R 407 B	Small	from	34.0 bar	to	33.0 bar
	Bare	from	30.5 bar	to	29.6 bar
	Sunshield	from	27.0 bar	to	26.5 bar
	Insulated		none		none
R 407 C	Small	from	30.2 bar	to	29.9 bar
	Bare	from	27.0 bar	to	26.8 bar
	Sunshield	from	24.1 bar	to	23.9 bar
	Insulated	from	21.4 bar	to	21.3 bar

4.2.4.3

Replace "to indicate requirements" with "to indicate provisions" and "designated using the abbreviation TP" with "identified by an alpha numeric designation beginning with the letters "TP".

Amend TP1, TP2, and TP3 to read "the degree of filling prescribed in ... shall not be exceeded ..."

TP4: delete "for portable tanks".

TP12: amend to read: "This substance is highly corrosive to steel".

TP19 (twice) and TP 21: replace "wall thickness" with "shell thickness".

Add two new portable tank special provisions "TP30" and "TP31" to read as follows:

"TP30 This substance shall be transported in insulated tanks."

"TP31 This substance may only be transported in tanks in the solid state."

CHAPTER 5.2

5.2.1.1 Replace "shown" with "marked".

5.2.2.1.3.1 Insert the words "Packages containing" before "Substances" (twice).

5.2.2.2.1.6 Add the following paragraph:

"(c) The Division 2.1 label displayed on cylinders and gas cartridges for liquid petroleum gases, where they may be shown in the background colour of the receptacle if adequate contrast is provided."

5.2.2.2.2 Amend 5.2.2.2.2 to read as follows:

"(No 2.1)
Division 2.1
Flammable gases
Symbol (flame): black or white (except as provided for in 5.2.2.1.6 (c))
Background: red, Figure "2" in bottom corner".

CHAPTER 5.4

Replace the existing text with the following one:

D O C U M E N T A T I O N

Introductory note

NOTE: These Regulations do not preclude the use of electronic data processing (EDP) and electronic data interchange (EDI) transmission techniques as an aid to paper documentation.

5.4.1 Dangerous goods transport documentation

5.4.1.1 General

Except as otherwise provided, the consignor who offers dangerous goods for transport shall describe the dangerous goods on a transport document and provide additional information and documentation as specified in these Regulations.

5.4.1.2 Form of the transport document

5.4.1.2.1 A dangerous goods transport document may be in any form, provided it contains all of the information required by these Regulations.

5.4.1.2.2 If both dangerous and non-dangerous goods are listed in one document, the dangerous goods shall be listed first, or otherwise be emphasized.

5.4.1.2.3 *Continuation page*

A dangerous goods transport document may consist of more than one page, provided pages are consecutively numbered.

5.4.1.2.4 The information on a dangerous goods transport document shall be easy to identify, legible and durable.

5.4.1.2.5 *Example of a dangerous goods transport document*

The form shown in figure [5.4.1] is an example of a dangerous goods transport document.*

[Multimodal dangerous goods form on pages 405 and 406 of the Model Regulations to be inserted here as Figure [5.4.1].

5.4.1.3 *Consignor, consignee and date*

The name and address of the consignor and the consignee of the dangerous goods shall be included on the dangerous goods transport document. The date the dangerous goods transport document or an electronic copy of it was prepared or given to the initial carrier shall be included.

5.4.1.4 *Information required on the dangerous goods transport document*

5.4.1.4.1 *Dangerous goods description*

The dangerous goods transport document shall contain the following information for each dangerous substance, material or article offered for transport:

- (a) The UN number preceded by the letters "UN";
- (b) The proper shipping name, as determined according to 3.1.2;
- (c) The class or, when assigned, the Division of the goods, including for Class 1, the compatibility group letter. Any assigned subsidiary hazard class or division number(s) shall be entered following the numerical hazard class or Division and shall be enclosed in parenthesis. The words "Class" or "Division" may be included preceding the primary or subsidiary hazard class or Division numbers;

Where assigned, the packing group for the substance or article which may be preceded by "PG" (e.g. "PG II").

* *The secretariat suggests to keep a footnote equivalent to footnote 1/ on page 402 of the English version of the Model Regulations, as the documentation listed therein contains all relevant information for standardized transport document formats. It would read as follows: "For standardized formats, see also the relevant recommendations of ...".*

5.4.1.4.2 *Sequence of the dangerous goods description*

The dangerous goods description specified above shall be shown in sequence with no additional information interspersed, except as provided in these Regulations. An example of a dangerous goods description is:

" UN 1098 ALLYL ALCOHOL 6.1 (3) I"

NOTE: In addition to the requirements of these Regulations, other elements of information may be required by the competent authority or for certain modes of transport (e.g. flash point or flash point range in °C c.c. for sea transport). Unless permitted or required by these Regulations, additional information shall be placed after the dangerous goods description.

5.4.1.4.3 *Information which supplements the proper shipping name in the dangerous goods description*

The proper shipping name in the dangerous goods description shall be supplemented as follows:

- (a) *Technical names for "n.o.s." and other generic descriptions:* Proper shipping names that are assigned SP274 in Column 6 of the Dangerous Goods List shall be supplemented with their technical or chemical group names as described in 3.1.2.8;
- (b) *Empty uncleaned packagings and tanks:* Empty means of containment (including packagings, IBCs, portable tanks, road transport tanks and railway transport tanks) which contain the residue of dangerous goods of classes other than Class 7 shall be described as such by, for example, placing the words **"EMPTY UNCLEARED"** or **"RESIDUE LAST CONTAINED"** before or after the proper shipping name;
- (c) *Wastes:* For waste dangerous goods (other than radioactive wastes) which are being transported for disposal, or for processing for disposal, the proper shipping name shall be preceded by the word **"WASTE"**, unless this is already a part of the proper shipping name;
- (d) *Elevated temperature substances:* If the proper shipping name of a substance which is transported or offered for transport in a liquid state at a temperature equal to or exceeding 100 °C, or in a solid state at a temperature equal to or exceeding 240 °C, does not convey the elevated temperature condition (for example, by using the term **"MOLTEN"** or **"ELEVATED TEMPERATURE"** as part of the shipping name), the word **"HOT"** shall immediately precede the proper shipping name.

5.4.1.5 *Information required in addition to the dangerous goods description*

In addition to the dangerous goods description the following information shall be included after the dangerous goods description on the dangerous goods transport document.

5.4.1.5.1 *Total quantity of dangerous goods*

Except for empty uncleaned packagings, the total quantity of dangerous goods covered by the description (by volume or mass as appropriate) of each item of dangerous goods bearing a different proper shipping name, UN number or packing group shall be included. For Class 1 dangerous goods, the quantity shall be the net explosive mass. For dangerous goods transported in salvage packagings, an estimate of the quantity of dangerous goods shall be given. The number and kind (e.g. drum, box...etc) of packagings shall also be indicated. Abbreviations may be used to specify the unit of measurement for the total quantity.

5.4.1.5.2 *Limited quantities*

When dangerous goods are transported according to the exceptions for dangerous goods packed in limited quantities provided for in Column 7 of the Dangerous Goods List and Chapter 3.4, the words "**limited quantity**" or "**LTD QTY**" shall be included.

5.4.1.5.3 *Salvage packagings*

For dangerous goods transported in salvage packagings, the words "**SALVAGE PACKAGE**" shall be included.

5.4.1.5.4 *Temperature stabilized substances*

If the word "STABILIZED" is part of the proper shipping name (see also 3.1.2.6), when stabilization is by means of temperature control, the control and emergency temperatures (see 7.1.4.3.1) shall be indicated in the transport document, as follows:

"Control temperature:°C Emergency temperature: °C".

5.4.1.5.5 *Special provisions for reactive substances stabilized by temperature control*

For substances which contain the term "STABILIZED" in the proper shipping name and which require temperature control during transport, the control and emergency temperatures shall be indicated in the transport document.

5.4.1.5.6 *Self-reactive substances and organic peroxides*

For self-reactive substances of Division 4.1 and for organic peroxides which require temperature control during transport, the control and emergency temperatures (see 7.1.4.3.1) shall be indicated on the dangerous goods transport document, as follows:

"Control temperature:° C Emergency temperature: °C".

5.4.1.5.6.1 When for certain self-reactive substances of Division 4.1 and organic peroxides of Division 5.2 the competent authority has permitted the "EXPLOSIVE" subsidiary risk label (model No. 1) to be dispensed with for the specific package, a statement to this effect shall be included.

5.4.1.5.6.2 When organic peroxides and self-reactive substances are transported under conditions where approval is required (for organic peroxides, see 2.5.3.2.5, 4.1.7.2.2, 4.2.1.13.1 and 4.2.1.13.3; for self-reactive substances, see 2.4.2.3.2.4 and 4.1.7.2.2), a statement to this effect shall be included in the dangerous goods transport document. A copy of the classification approval and conditions of transport for non-listed organic peroxides and self-reactive substances shall be attached to the dangerous goods transport document.

5.4.1.5.6.3 When a sample of an organic peroxide (see 2.5.3.2.5.1) or a self-reactive substance (see 2.4.2.3.2.4(b)) is transported, a statement to this effect shall be included in the dangerous goods transport document.

5.4.1.5.7 *Infectious substances*

The full address of the consignee shall be shown on the document, together with the name of a responsible person and his telephone number.

5.4.1.5.8 *Radioactive material*

5.4.1.5.8.1 The following information shall be included for each consignment of Class 7 material, as applicable, in the order given:

- (a) The name or symbol of each radionuclide or, for mixtures of radionuclides, an appropriate general description or a list of the most restrictive nuclides;
- (b) A description of the physical and chemical form of the material, or a notation that the material is special form radioactive material or low dispersible radioactive material. A generic chemical description is acceptable for chemical form;
- (c) The maximum activity of the radioactive contents during transport expressed in units of becquerels (Bq) with an appropriate SI prefix (see 1.2.2.1). For fissile material, the mass of fissile material in units of grams (g), or appropriate multiples thereof, may be used in place of activity;
- (d) The category of the package, i.e. I-WHITE, II-YELLOW, III-YELLOW;
- (e) The transport index (categories II-YELLOW and III-YELLOW only);
- (f) For consignments including fissile material other than consignments excepted under 6.4.11.2, the criticality safety index;
- (g) The identification mark for each competent authority approval certificate (special form radioactive material, low dispersible radioactive material, special arrangement, package design, or shipment) applicable to the consignment;

- (h) For consignments of packages in an overpack or freight container, a detailed statement of the contents of each package within the overpack or freight container and, where appropriate, of each overpack or freight container in the consignment. If packages are to be removed from the overpack or freight container at a point of intermediate unloading, appropriate transport documents shall be made available;
- (i) Where a consignment is required to be shipped under exclusive use, the statement "EXCLUSIVE USE SHIPMENT"; and
- (j) For LSA-II, LSA-III, SCO-I and SCO-II, the total activity of the consignment as a multiple of A2.

5.4.1.5.8.2 The transport document shall include a statement regarding actions, if any, that are required to be taken by the carrier. The statement shall be in the languages deemed necessary by the carrier or the authorities concerned, and shall include at least the following points:

- (a) Supplementary requirements for loading, stowage, transport, handling and unloading of the package, overpack or freight container including any special stowage provisions for the safe dissipation of heat (see 7.1.6.3.2), or a statement that no such requirements are necessary;
- (b) Restrictions on the mode of transport or conveyance and any necessary routing instructions;
- (c) Emergency arrangements appropriate to the consignment.

5.4.1.5.8.3 The applicable competent authority certificates need not necessarily accompany the consignment. The consignor shall make them available to the carrier(s) before loading and unloading.

5.4.1.6 Certification

5.4.1.6.1 The dangerous goods transport document shall include a certification or declaration that the consignment is acceptable for transport and that the goods are properly packaged, marked and labelled, and in proper condition for transport in accordance with the applicable regulations. The text for this certification is:

"I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations."

The certification shall be signed and dated by the consignor. Facsimile signatures are acceptable where applicable laws and regulations recognize the legal validity of facsimile signatures.

5.4.1.6.2 If the dangerous goods documentation is presented to the carrier by means of electronic data processing (EDP) or electronic data interchange (EDI) transmission

techniques, the signature(s) may be replaced by the name(s) (in capitals) of the person authorized to sign.

5.4.2 Container/vehicle packing certificate

5.4.2.1 When dangerous goods are packed or loaded into any container ^{1/} or vehicle which will be transported by sea, those responsible for packing of the container or vehicle shall provide a "container/vehicle packing certificate" specifying the container/vehicle identification number(s) and certifying that the operation has been carried out in accordance with the following conditions:

- (a) The container/vehicle was clean, dry and apparently fit to receive the goods;
- (b) Packages, which need to be segregated in accordance with applicable segregation requirements, have not been packed together onto or in the container/vehicle ;
- (c) All packages have been externally inspected for damage, and only sound packages loaded have been loaded;
- (d) All goods have been properly loaded and, where necessary, adequately braced with securing material to suit the mode(s) of transport for the intended journey;
- (e) Goods loaded in bulk have been evenly distributed within the container/vehicle ;
- (f) For consignments including goods of Class 1 other than Division 1.4, the container/vehicle is structurally serviceable in accordance with 7.1.3.2.1;
- (g) The container/vehicle and packages are properly marked, labelled and placarded, as appropriate;
- (h) When solid carbon dioxide (CO₂-dry ice) is used for cooling purposes, the container/vehicle is externally marked or labelled in a conspicuous place, such as, at the door end, with the words: "DANGEROUS CO₂ (DRY ICE) INSIDE. VENTILATE THOROUGHLY BEFORE ENTERING"; and
- (i) A dangerous goods transport document, as indicated in 5.4.1.1, has been received for each dangerous goods consignment loaded in the container/vehicle.

NOTE: *The container/vehicle packing certificate is not required for tanks.*

^{1/} Container means an article of transport equipment that is of a permanent character and accordingly strong enough to be suitable for repeated use; specially designed to facilitate the transport of goods, by one or more modes of transport, without intermediate reloading; designed to be secured and/or readily handled, having fittings for these purposes, and approved in accordance with the International Convention for Safe Containers (CSC), 1972, as amended. The term "container" includes neither vehicle nor packaging. However, a container that is transported on a chassis is included.

5.4.2.2 The information required in the dangerous goods transport document and the container/vehicle packing certificate may be incorporated into a single document, if not, these documents shall be attached one to the other. If the information is incorporated into a single document, the document shall include a signed declaration such as "It is declared that the packing of the goods into the container/vehicle has been carried out in accordance with the applicable provisions". This declaration shall be dated and the person signing this declaration shall be identified on the document.

5.4.3 Emergency response information

For consignments for which a dangerous goods transport document is required by these Regulations, appropriate information shall be immediately available at all times for use in emergency response to accidents and incidents involving dangerous goods in transport. The information shall be available away from the packages containing the dangerous goods and immediately accessible in the event of an accident or incident. Methods of compliance include:

- (a) Appropriate entries in the transport document; or
- (b) Provision of a separate document such as a safety data sheet; or
- (c) Provision of a separate document, such as the ICAO "Emergency Response Guidance for Aircraft Incidents Involving Dangerous Goods" or the IMO "Emergency Procedures for Ships Carrying Dangerous Goods" and "Medical First Aid Guide in Accidents Involving Dangerous Goods", for use in conjunction with the transport document."

CHAPTER 5.5

5.5.2 Amend to read as follows:

"5.5.2 Documentation and identification of fumigated units

5.5.2.1 Transport documents associated with the transport of units that have been fumigated shall show the date of fumigation and the type and amount of the fumigant used. In addition, instructions for disposal of any residual fumigant including fumigation devices (if used) shall be provided.

5.5.2.2 A warning sign as specified in 5.5.2.3 shall be placed on each fumigated unit in a location where it will be easily seen by persons attempting to enter the interior of the unit. When the fumigated unit has been ventilated to remove harmful concentrations of fumigant gas, the warning sign shall be removed.

5.5.2.3 The fumigation warning sign shall be rectangular and shall not be less than 300 mm wide and 250 mm high. The markings shall be black print on a white background with lettering not less than 25 mm high. An illustration of this sign is given in Figure [5.6] [5.5.1]."

CHAPTER 6.1

Delete the introductory notes (Notes 1, 2 and 3).

6.1.1.4 Add "reconditioned", after "manufactured" and delete "manufactured" after "each".

6.1.1.5, 6.3.1.3, 6.4.2.12
and 6.6.1.3 Add the following text as new paragraphs 6.1.1.5, 6.3.1.3, 6.4.2.12 and 6.6.1.3:

"Manufacturers and subsequent distributors of packagings shall provide information regarding procedures to be followed and a description of the types and dimensions of closures (including required gaskets) and any other components needed to ensure that packages as presented for transport are capable of passing the applicable performance tests of this Chapter."

6.1.2.3 Delete "and infectious substances packagings marked in accordance with 6.3.1.1,".

6.1.3 Under Note 3, replace three times "Group" with "packing group".

6.1.3.2 Renumber this paragraph as "6.1.3.3" and amend to read as follows:

"6.1.3.3 Every packaging other than those referred to in 6.1.3.2 liable to undergo a reconditioning process shall bear the marks indicated in 6.1.3.1 (a) to (e) in a permanent form. Marks are permanent if they are able to withstand the reconditioning process (e.g. embossed). For packagings other than metal drums of a capacity greater than 100 litres, these permanent marks may replace the corresponding durable markings prescribed in 6.1.3.1."

6.1.3.2.1, 6.1.3.2.2
and 6.1.3.2.3 Renumber these paragraphs as 6.1.3.2, 6.1.3.4 and 6.1.3.5 respectively.

Renumber the following paragraphs accordingly.

6.1.3.6 (Former 6.1.3.3) Amend this paragraph to read as follows:

"6.1.3.6 Marking shall be applied in the sequence of the sub-paragraphs in 6.1.3.1; each element of the marking required in these sub-paragraphs and when appropriate sub-paragraphs (h) to (j) of 6.1.3.4 **shall be clearly separated, e. g. by a slash or space, so as to be easily identifiable. For examples, see 6.1.3.9.**

Any additional markings authorized by a competent authority shall still enable the parts of the mark to be correctly identified with reference to 6.1.3.1."

6.1.3.7 (i) (Former 6.1.3.4 (i)) Amend to read as follows:

"(i) the name of the reconditioner or other identification of the packaging specified by the competent authority."

- 6.1.4.8.2 Amend the terms "the period of use permitted for the transport of dangerous substances is five years..." to read "the period of use [permitted]* for the transport of dangerous substances shall not exceed five years ...".
- 6.1.4.18.1 Amend the first sentence to read as follows:
"Bags shall be made of a suitable kraft paper or of an equivalent paper with at least three plies, the middle ply of which may be net-cloth and adhesive bonding to the outer paper plies."
- 6.1.5.2.5 Amend last sentence to read as follows:
"The minimum height of the stack including the test sample shall be 3 metres."
- 6.1.5.5.4 Replace "substance" with "liquid" (three times).
- 6.1.5.5.5 Replace "substances" with "liquids".
- 6.1.5.6.2 Delete "non-dangerous" after "are" in the first sentence.

CHAPTER 6.3

- 6.3.1.1 In the first sentence, replace "may, after decision by the competent authority" with "shall".
Add the following sentence at the end:
"Each element of the marking applied in accordance with (a) to (g) shall be clearly separated, e.g. by a slash or space, so as to be easily identifiable."

CHAPTER 6.4

- 6.4.23.4 Amend the introductory sentence to read: "An application for approval of Type B(U) and Type C package design shall include:"
- 6.4.23.9 Amend the text pertaining to B(U), B(M) and Type C package design as follows:
B(U) Type B(U) package design [B(U)F if for fissile material]
B(M) Type B(M) package design [B(M)F if for fissile material]
C Type C package design (CF if for fissile material)".
- 6.4.23.13 Insert the missing sub-paragraph (h) to read as follows:
"(h) Reference to information provided by the applicant relating to specific actions to be taken prior to the shipment."

* *Note by the secretariat: The word "permitted" was related to the word "is" which has been replaced by "shall not exceed". Therefore, the secretariat suggests deleting "permitted".*

CHAPTER 6.5

6.5.1.1.4 Add a new paragraph to read:

"Manufacturers and subsequent distributors of IBCs shall provide information regarding procedures to be followed and a description of the types and dimensions of closures (including required gaskets) and any other components needed to ensure that IBCs as presented for transport are capable of passing the applicable performance tests of this Chapter."

6.5.1.2 Delete the definition of *Maximum permissible load*.

Amend the definition of *Maximum permissible gross mass* to avoid the term "load" to read:

"Maximum permissible gross mass means the mass of the IBC and any service or structural equipment together with the maximum net mass."

6.5.1.4.1 (a) Amend the top line centre column in the table to read "For solids, filled or discharged".

6.5.1.4.3 Change "loaded" to "filled" in the table 18 times.

6.5.1.6.4 Amend last sentence to read:

"A report of each inspection shall be kept by the owner of the IBC at least until the next inspection. The report shall include the results of the inspection and shall identify the party performing the inspection (see also the marking requirements in 6.5.2.2.1)."

6.5.1.6.5 Amend to read:

"When the structure of an IBC is impaired as a result of impact (e.g. accident) or any other cause, it shall be repaired or otherwise maintained (see definition of routine maintenance of IBCs in 1.2.1), so as to conform to the design type."

6.5.1.6.6 Add a new 6.5.1.6.6 to read *:

"In addition to any other testing and inspection requirements in these Regulations, an IBC shall be subjected to the full testing and inspection requirements set out in 6.5.4.14.3 and 6.5.1.6.4(a), and the required reports shall be prepared, whenever it is repaired.

* Note by the secretariat: This new 6.5.1.6.6 is not very well constructed. The secretariat suggests to revise it as follows:

"6.5.1.6.6 Repaired IBCs

6.5.1.6.6.1 (first paragraph)

6.5.1.6.6.2 (Para (a); (i), (ii) and (iii) would become (a), (b) and (c));

6.5.1.6.6.3 Para (b)".

- (a) Except for repairs by the original IBC manufacturer whose design type marks appear on the IBC, or the owner of the IBC whose State and name or authorized symbol is durably marked on the IBC, the party performing the repair shall durably mark the IBC near the manufacturer's UN design type marking to show:
- (i) the State in which the repair was carried out;
 - (ii) the name or authorized symbol of the party performing the repair; and
 - (iii) the date (month and year) of the repair (if not already marked in accordance with 6.5.2.2.1);
- (b) Such tests and inspections may be considered to satisfy the requirements for the two and a half and five year periodic tests and inspections."

Renumber existing 6.5.1.6.6 as 6.5.1.6.7

- 6.5.2.1.1 (h) Amend to read: "The maximum permissible gross mass in kg".
- 6.5.2.1.1 Add the following sentence at the end:
- "Each element of the marking applied in accordance with (a) to (h) and with 6.5.2.2 shall be clearly separated, e.g. by a slash or space, so as to be easily identifiable."
- 6.5.2.2.1 Change "Maximum loading/discharge pressure" to "Maximum filling/discharge pressure".
- 6.5.3.1.1 Change "loaded" to "filled" twice.
- 6.5.3.1.5 In the second formula under "L₀", amend "5.65 A" to read "5.65 \sqrt{A} ". (English only)
- 6.5.3.3.1 Change "loaded" to "filled" 4 times.
- 6.5.3.3.6 Delete.
- 6.5.3.4.1 Change "loaded" to "filled" 4 times.
- 6.5.3.4.10 Delete this paragraph and renumber subsequent paragraphs accordingly.
- 6.5.3.5.1 Change "loaded" to "filled".
- 6.5.3.6.1 Change "loaded" to "filled".
- 6.5.4.4.2 Amend to read as follows:
- "The IBC shall be filled. A load shall be added and evenly distributed. The mass of the filled IBC and the load shall be 1.25 times the maximum permissible gross mass."

6.5.4.4.2, 6.5.4.5.2, 6.5.4.6.2,
6.5.4.7.2, 6.5.4.8.2, 6.5.4.9.2,
6.5.4.10.2, 6.5.4.11.2

and 6.5.4.12.2 Amend the heading of these paragraphs to read "Preparation of the IBC for test".

6.5.4.5.2 Amend to read as follows:

"Metal, rigid plastics and composite IBCs shall be filled. A load shall be added and evenly distributed. The mass of the filled IBC and the load shall be twice the maximum permissible gross mass."

6.5.4.6.2 Amend to read as follows:

"The IBC shall be filled to its maximum permissible gross mass. If the specific gravity of the product being used for testing makes this impracticable, the IBC shall additionally be loaded so that it is tested at its maximum permissible gross mass the load being evenly distributed."

6.5.4.6.3(b)(i) Amend to read:

"one or more IBCs of the same type filled to the maximum permissible gross mass stacked on the test IBC;"

6.5.4.7.1 Change "loaded" to "filled".

6.5.4.8.1 Change "loaded" to "filled".

6.5.4.9.2 (b) Amend to read:

"(b) Flexible IBCs: the IBC shall be filled to not less than 95% of its capacity and to its maximum permissible gross mass, the contents being evenly distributed."

6.5.4.10.2, 6.5.4.11.2

and 6.5.4.12.2 Amend these paragraphs to read as follows:

"The IBC shall be filled to not less than 95% of its capacity and to its maximum permissible gross mass, the contents being evenly distributed."

6.5.4.10.3 Amend the second sentence of 6.5.4.10.3 to read "The IBC shall then be subjected to a uniformly distributed superimposed load equivalent to twice the maximum permissible gross mass."

6.5.4.14 Amend the heading to read: "Testing of metal, rigid plastics and composite IBCs".

6.5.4.14.3 Amend to read as follows:

"Each metal, rigid plastics and composite IBC for liquids, or for solids which are filled or discharged under pressure, shall be subjected to the leakproofness test, as an initial test (i.e. before the IBC is first used for transport), after repair, and at intervals of not more than two and a half years."

6.5.4.14.4 Amend to read as follows:

"The results of tests and the identity of the party performing the tests shall be recorded in test reports to be kept by the owner of the IBC at least until the date of the next test."

CHAPTER 6.6

6.6.1.3 Add the following new paragraph:

"6.6.1.3 The specific requirements for large packagings in 6.6.4 are based on large packagings currently used. In order to take into account progress in science and technology, there is no objection to the use of large packagings having specifications different from those in 6.6.4 provided they are equally effective, acceptable to the competent authority and able successfully to withstand the tests described in 6.6.5. Methods of testing other than those described in these Regulations are acceptable provided they are equivalent."

6.6.2 Insert the number 6.6.2.1 before the existing text ("The code used...") and add the following new paragraph:

"6.6.2.2 The letter "W" may follow the Large Packaging code. The letter "W" signifies that the large packaging, although of the same type indicated by the code, is manufactured to a specification different from those in 6.6.4 and is considered equivalent in accordance with the requirements in 6.6.1.3."

6.6.3.1 Add the following sentence at the end:

"Each element of the marking applied in accordance with (a) to (h) shall be clearly separated, e.g. by a slash or space, so as to be easily identifiable."

6.6.5.3.1.2, 6.6.5.3.1.3, 6.6.5.3.1.4, 6.6.5.3.2.2, 6.6.5.3.2.3, 6.6.5.3.3.2, 6.6.5.3.3.3, 6.6.5.3.3.4, 6.6.5.3.3.5, 6.6.5.3.4.2, 6.6.5.3.4.3, 6.6.5.3.4.5.1, and 6.6.5.3.4.5.3 Replace the word "packagings" with "packaging".

6.6.5.3.2.2 Replace the existing paragraph with the following text:

"6.6.5.3.2.2 *Preparation of large packagings for test.*

The large packaging shall be loaded to twice its maximum permissible gross mass. A flexible large packaging shall be loaded to six times its maximum permissible gross mass, the load being evenly distributed."

6.6.5.3.3.3 Replace "plastic" with "plastics".

6.6.5.3.3.4 Replace "must" with "may".

6.6.5.3.4.5.3 Insert a comma after "drop test".

6.6.5.4.1 and

6.6.5.4.3 Delete "s" from "packagings".

CHAPTER 6.7

6.7.2.1(b)(i) Below the headings "*Maximum allowable working pressure (MAWP)*" and "*Design pressure*" amend (b)(i) to read:

"(i) the absolute vapour pressure (in bar) of the substance at 65 °C (at the highest temperature during filling, discharge or transport for elevated temperature substances transported above 65 °C), minus 1 bar; and"

Under the definition of "*Portable tank*", replace "lifted onto a transport vehicle" with "loaded onto a transport vehicle".

6.7.2.2.3
and 6.7.2.2.7 Replace "substances" with "substance(s)".

6.7.2.2.9.1 Insert the following new paragraph:

"For portable tanks that are intended for use offshore, the dynamic stresses imposed by handling in open seas shall be taken into account."

6.7.2.2.10 Insert, after the second sentence, the following text:

"A shell used for the transport of solid substances of packing groups II or III only which do not liquefy during transport may be designed for a lower external pressure, subject to competent authority approval. In this case the vacuum-relief device shall be set to relieve at this lower pressure."

6.7.2.2.13, 6.7.2.2.14, 6.7.2.3.3, 6.7.3.2.1, 6.7.3.2.10, 6.7.3.2.11,
6.7.3.3.3, 6.7.4.2.1, 6.7.4.2.13, 6.7.2.4.14
and 6.7.4.3.3 Replace "yield strength" with "yield stress" and "proof strength" with "proof stress".

6.7.2.2.16 Amend the first sentence to read "... portable tank instruction indicated in Column 10 of the Dangerous Goods List and described in 4.2.4.2.6 or of the Dangerous Goods List and described in 4.2.4.3."

6.7.2.2.17 Add the following new paragraph:

"6.7.2.2.17 Thermal insulation directly in contact with the shell intended for substances transported at elevated temperature shall have an ignition temperature at least 50 °C higher than the maximum design temperature of the tank."

6.7.2.3.2 Replace "applicable tank instruction" with "applicable portable tank instruction".
Add at the end of the second sentence "and described in 4.2.4.3."

6.7.2.4.1 (c) Amend to read "... portable tank instruction indicated in Column 10 of the Dangerous Goods List and described in 4.2.4.2.6 or of the Dangerous Goods List and described in 4.2.4.3."

- 6.7.2.4.6
and 6.7.2.4.7 Amend the explanation of "e₀" to read:
- "minimum thickness (in mm) of the reference steel specified in the applicable portable tank instruction indicated in Column 10 of the Dangerous Goods List and described in 4.2.4.2.6 or by a portable tank special provision indicated in Column 11 of the Dangerous Goods List and described in 4.2.4.3;"
- 6.7.2.5 Add the following new paragraphs:
- "6.7.2.5.12 The heating system shall be designed or controlled so that a substance cannot reach a temperature at which the pressure in the tank exceeds its MAWP or causes other hazards (e.g. dangerous thermal decomposition).
- 6.7.2.5.13 The heating system shall be designed or controlled so that power for internal heating elements shall not be available unless the heating elements are completely submerged. The temperature at the surface of the heating elements for internal heating equipment, or the temperature at the shell for external heating equipment shall, in no case, exceed 80% of the autoignition temperature (in °C) of the substance transported.
- 6.7.2.5.14 If an electrical heating system is installed inside the tank, it shall be equipped with an earth leakage circuit breaker with a releasing current of less than 100mA.
- 6.7.2.5.15 Electrical switch cabinets mounted to tanks shall not have a direct connection to the tank interior and shall provide protection of at least the equivalent of type IP56 according to IEC 144 or IEC 529."
- 6.7.2.6.4 Replace "6.7.2.6.3.1" with "6.7.2.6.3 (a)".
- 6.7.2.8.3 Amend to read "..., pinholing, ...".
- 6.7.2.12.2.3 In the title, replace "emergency vent capacity" with "required rate of discharge".
- 6.7.2.19.4 Insert after the first sentence the following text :
- "For tanks only used for the transport of solid substances other than toxic or corrosive substances and which do not liquefy during transport, the hydraulic pressure test may be replaced by a suitable pressure test at 1.5 times the MAWP, subject to competent authority approval."
- 6.7.2.19.5 In the last sentence, amend "procedures by the competent authority" to read "procedures specified by the competent authority".
- 6.7.2.19.8 (a) Replace "the shell unsafe" with "the portable tank unsafe".
- 6.7.2.19.8 (b) and
6.7.3.15.8 (b) Shall read as follows: "... defects, or any other conditions,...".
- 6.7.2.20.1, 6.7.3.16.1
and 6.7.4.15.1 In the list of information, add "(see 6.7.1.2)" after "For Alternative Arrangements".

- 6.7.2.20.2 In the list of information to be marked on the portable tank, delete the words "Name of the substance(s).... 50 °C".
- 6.7.3.1 The end of the definition of "shell" shall read "... or external structural equipment;".
- In the definition of "maximum allowable working pressure", under (b)(ii), read "... due to an increase".
- 6.7.3.1 and 6.7.4.1 In the definition of "portable tank" replace "loaded and discharged" with "filled and discharged".
- 6.7.3.2.5 Replace "gases" with "gas(es)".
- 6.7.3.2.11 In the first sentence read "... the values according to national.", in the second sentence, "... when these greater values are..".
- 6.7.3.3.3.1 Amend the second sentence to read "... when these greater values are.."
- 6.7.3.5.9 Amend the second and third sentences to read: "All stop-valves with a screwed spindle shall... For other stop-valves the position (open and closed)...".
- 6.7.3.5.13 Amend to read "valves and accessories".
- 6.7.3.8.1.1 Amend the definition of "C" to read "a constant which is derived from one of the following formulae as a function of the ratio k of specific heats".
- 6.7.3.13.1 Replace "fabricated" with "constructed".
- 6.7.3.14.1 The second sentence shall read "This certificate shall attest that a portable tank ...".
- 6.7.4.2.13 (b) Replace "... or, in case of austenitic steel..." with "... or, for austenitic steel...".
- 6.7.4.2.14 Amend the second sentence to read: "... when these greater values are attested ...".
- 6.7.4.4.7 Amend the references in the first sentence to read as follows: "6.7.4.4.1 to 6.7.4.4.5".
- 6.7.4.6.1 Shall read "... fully open at a pressure equal to...".
- 6.7.4.10.1 Amend the beginning to read as follows: "Each pressure-relief device inlet shall be...".
- 6.7.4.12.1 Amend the references in the second sentence to read as follows: "The forces specified in 6.7.4.2.12 and the safety factor specified in 6.7.4.2.13..".
- 6.7.4.13.1 Amend the 4th sentence to read: "... the materials of construction of the shell and jacket...".
- 6.7.4.14.9 Delete "of the portable tank".
- 6.7.4.15.1 Replace "The names, in full, of the gases for..." with "The name, in full, of the gas(es) for...".

CHAPTER 7.1

7.1.2.1 Add "... and 7.1.3.2" at the end of the last sentence.

7.1.3.2 Insert the following new 7.1.3.2 :

"7.1.3.2 *Mixed transport of goods of Class 1 with dangerous goods of other classes in freight containers, vehicles or wagons*

7.1.3.2.1 Except where otherwise specially provided for in these Regulations, goods of Class 1 shall not be transported together in freight containers, vehicles or wagons with dangerous goods of other classes.

7.1.3.2.2 Goods in Division 1.4, compatibility group S, may be transported together with dangerous goods of other classes.

7.1.3.2.3 Blasting explosives (except UN 0083 EXPLOSIVE, BLASTING, TYPE C,) may be transported together with ammonium nitrate and inorganic nitrates of Class 5.1 (UN Nos 1942 and 2067) provided the aggregate is treated as blasting explosives under Class 1 for the purpose of placarding, segregation, stowage and maximum permissible load.

7.1.3.2.4 Life-saving appliances (UN Nos 3072 and 2990) containing Class 1 goods as equipment may be transported together with the same dangerous goods as contained in the appliances.

7.1.3.2.5 Air-bag inflators, or air-bag modules [or gas generators for seat belts], or seat-belt pretensioners, of Division 1.4, compatibility group G, (UN 0503) may be transported with air-bag inflators or air-bag modules [or gas generators for seat belts] or seat-belt pretensioners of Class 9 (UN 3268)."

Renumber 7.1.3.2 and subsequent paragraphs accordingly.

7.1.5 Insert a new section 7.1.5 to read as follows:

"7.1.5 *Special provisions applicable to the transport of substances stabilized by temperature control (other than self-reactive substances and organic peroxides)*

7.1.5.1 These provisions apply to the transport of substances:

- (a) the proper shipping name of which contains the word "STABILIZED";
and
- (b) for which the SADT (see 7.1.4.3.1.3) as presented for transport in the package, IBC or tank is 50 °C or lower.

When chemical inhibition is not used to stabilize a reactive substance which may generate dangerous amounts of heat and gas, or vapour, under normal transport conditions, these substances need to be transported under temperature control. These provisions do not

apply to substances which are stabilized by the addition of chemical inhibitors such that the SADT is greater than 50 °C.

NOTE: Some substances which are transported under temperature control are prohibited from transport by certain modes.

7.1.5.2 The provisions in 7.1.4.3.1.1 to 7.1.4.3.1.3 and 7.1.4.3.2 apply to substances meeting criteria (a) and (b) in 7.1.5.1.

7.1.5.3 The actual transport temperature may be lower than the control temperature (see 7.1.4.3.1.1) but shall be selected so as to avoid dangerous separation of phases.

7.1.5.4 When these substances are transported in IBCs or portable tanks, the provisions for a SELF-REACTIVE LIQUID TYPE F, TEMPERATURE CONTROLLED shall apply. For transport in IBCs, see the special provisions in 4.1.7.2 and the "Additional requirements" in packing instruction IBC520; for transport in portable tanks, see the additional provisions in 4.2.1.13.

7.1.5.5 If a substance the proper shipping name of which contains the word "STABILIZED" and which is not normally required to be transported under temperature control is transported under conditions where the temperature may exceed 55 °C, it may require temperature control."

Renumber subsequent paragraphs and sub-paragraphs accordingly.

APPENDIX A and ALPHABETICAL INDEX

- Amend Appendix A and the alphabetical index in accordance with the amendments adopted for Chapter 3.2.
- Add the following entries in the alphabetical index:

"Battery, lithium, see	9	3090
	9	3091"
"1-CHLOROPROPANE	3	1278"
"Hydrazine hydrate, see	8	2030"

- Amend the entry for propyl chloride to read as follows:

"Propyl chloride, see	3	1278".
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