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Working Party on the Transport of Dangerous Goods

**Joint Meeting of the RID Safety Committee and
the Working Party on the Transport of
Dangerous Goods**

REPORT OF THE SESSION*
Held in Geneva from 10 to 14 September 2001

Addendum 2

Annex 1: Texts adopted by the Joint Meeting (cont'd)

Draft amendments to Part 4 of the restructured RID/ADR

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Chapter 4.1

Delete the introductory notes (Notes 1 and 2).

4.1.1 Amend the title to read: "**General provisions for the packing of dangerous goods in packagings, including IBCs and large packagings.**"

Amend the note under the title to read:

"NOTE: The general provisions of this section only apply to the packing of goods of Class 2, 6.2 and 7 as indicated in 4.1.8.2 (Class 6.2), 4.1.9.1.5 (Class 7) and in the applicable packing instructions of 4.1.4 (packing instructions P201 and P202 for Class 2 and P621, IBC620 and LP621 for Class 6.2)."

4.1.1.1 Replace "and/or" with "and between transport units and".

Insert the following sentence after "(resulting from altitude, for example)": "Packagings, including IBCs and large packagings, shall be closed in accordance with the information provided by the manufacturer."

Amend the end of the last sentence to read: "...and to new, reused, repaired of remanufactured IBCs, and to new or reused large packagings."

4.1.1.3 and

4.1.1.9

Add "6.3.2" after "6.1.5" and replace "respectively" with "as applicable".

4.1.1.12(c)

Amend to read:

"(c) after the repair or remanufacture of any IBC, before it is reused for carriage."

4.1.1.17

Add the following new paragraph:

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

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

Renumber following paragraph and sub-paragraphs accordingly.

4.1.1.18.1

(Former 4.1.1.17.1) Amend to read as follows:

"4.1.1.18.1 Damaged, defective, leaking or non-conforming packages, or dangerous goods that have spilled or leaked may be carried 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 4.1.1.18.2."

4.1.2.3

Delete "and always be carried in closed wagons/vehicles or containers."

4.1.2.4 Add a new 4.1.2.4 to read as follows:

"4.1.2.4 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 IBCs composite as follows: "Composite: 11HZ2 and 21HZ2"

4.1.3.6 Amend to read as follows:

"4.1.3.6 All cylinders, tubes, pressure drums, and bundles of cylinders conforming to packing instruction P200 and to the construction requirements of Chapter 6.2 are authorized for the carriage of any liquid or solid substance assigned to packing instructions P001 or P002 unless otherwise indicated in the packing instruction or by a special provision in Column (9a) of Table A of Chapter 3.2. The capacity of bundles of cylinders and tubes shall not exceed 1000 litres."

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 carried empty, uncleaned and unpackaged, the competent authority of the country of origin² may approve such carriage. 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 carriage 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 carriage, 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:

² *If the country of origin is not a Member State to COTIF/ contracting party to ADR, the competent authority of the first country Member State to COTIF/ contracting party to the ADR reached by the consignment.*

- (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 carriage;
- (e) They shall be fixed in cradles or crates or other handling devices or to the transport unit wagon or container in such a way that they will not become loose during normal conditions of carriage.

4.1.3.8.2 Unpackaged articles approved by the competent authority in accordance with the provisions of 4.1.3.8.1 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 attached to the transport document.

***NOTE:** A large and robust article may include flexible fuel containment systems, military equipment, machinery or equipment containing dangerous goods above the limited quantities according to 3.4.6."*

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

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

For packing instructions P134 and P138, add "fibreboard (1G)" in the column "Outer packagings and arrangements" under "Drums".

For packing instruction P144, add "plastics, solid (4H2)" in the column "Outer packagings and arrangements" under "Boxes" and under a new title "Drums", add "steel, removable head (1A2)", "aluminium, removable head (1B2)" and "plastics, removable head (1H2)".

For packing instructions P112 (c) and P113, add "aluminium (4B)" in the column "Outer packagings and arrangements" under "Boxes".

P001: Add a new special packing provision to read as follows:

"PP81 For UN 1790 with more than 60% but not more than 85% hydrofluoric acid and UN 2031 with more than 55% nitric acid, the permitted use of plastics drums and jerricans as single packagings shall be two years from their date of manufacture."

Under "Special packing provisions specific to RID and ADR" delete RR1.

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

P200 Under (9), add the following special packing provision under the new title "Requirements for substances not in Class 2":

"ab Pressure receptacles shall satisfy the following conditions:

- (i) The pressure test shall include an inspection of the inside of the pressure receptacles and check of accessories;
- (ii) In addition resistance to corrosion shall be checked every two years by means of suitable instruments (e.g. ultrasound) and the condition of the accessories verified;
- (iii) Wall thickness shall not be less than 3 mm.

ac Tests and inspections shall be carried out under the supervision of an expert approved by the competent authority.

ad Pressure receptacles shall satisfy the following conditions:

- (i) Pressure receptacles shall be designed for a design pressure of not less than 2.1 MPa (21 bar) (gauge pressure);
- (ii) In addition to the marks for refillable receptacles, the receptacles shall bear the following particulars in clearly legible and durable characters:
 - The UN number and the proper shipping name of the substance according to 3.1.2;
 - The maximum permitted mass when filled and the tare of the receptacle, including accessories fitted during filling, or the gross mass."

In table 3:

- For UN No.1051, delete "X" in the column "Pressure drums";
- For UN No. 1052, insert "ab,ac" in the column "Special packing provisions";
- For UN Nos. 1745, 1746 and 2495, insert "ab,ad" in the column "Special packing provisions".

P201: The following text becomes new (2):

"(2) In addition, the following packagings are authorized provided that the general provisions of **4.1.1** and **4.1.3** are met."

Rename the existing (2) and (3) as (a) and (b) respectively.

P202: Amend the first sentence to read: "The following packagings are authorized, provided that the general provisions of **4.1.1** and **4.1.3** are met."

P400(1), P401(1) and

P402(1): In the first sentence, replace "Steel gas cylinders and gas receptacles" with "Steel cylinders, pressure drums and tubes".

In the second sentence, replace "or the gas cylinders or receptacles" with "or the cylinders, pressure drums or tubes".

In the third sentence, replace "Cylinders and gas receptacles" with "Cylinders, pressure drums and tubes" and delete "of the cylinder".

P402: In (1) delete the last sentence: "Filling shall not be greater than 90 % of the capacity of the cylinder."

Add the following new paragraphs:

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

(4) Composite packagings consisting of a plastics receptacle with outer steel drum or aluminium (6HA1 or 6HB1) with a maximum capacity of 250 litres."

Replace "Special packing provision" with "Special packing provisions specific to RID and ADR" and amend "PP78" to read "RR4".

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

"PP24 UN Nos. 2852, 3364, 3365, 3366, 3367, 3368 and 3369 shall not be carried 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 carried 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."

Delete additional requirement 3.

P601: In the first sentence, after "and 4.1.3 are met", insert: "and the packagings are hermetically sealed..." and delete at the end "(see also the Table of 4.1.4.4)".

Under (3) Combination packagings, amend (f) to read:

"(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;"

Under (4), replace "Gas cylinders and gas receptacles" with "Cylinders, pressure drums and tubes".

P602: In the first sentence, after "and 4.1.3 are met", insert: "and the packagings are hermetically sealed..."

Amend (4) as follows:

"(4) Cylinders, pressure drums and tubes with a minimum test pressure of 1MPa (10 bar) (gauge pressure) conforming to the provisions of packing instruction P200. No cylinder, pressure drum or tube may be equipped with any pressure relief device. Cylinders, pressure drums and tubes shall have their valves protected."

P621: Amend the first sentence to read: "The following packagings are authorized, provided that the general provisions of 4.1.1 and 4.1.3 and the special provisions of 4.1.8 are met."

P650: Amend to read as follows:

P650	PACKING INSTRUCTION	P650
This packing 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 carriage, 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 carriage which might be caused under normal conditions of carriage, 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 carriage, 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 carriage each package shall be clearly and durably marked with the words "DIAGNOSTIC SPECIMENS". Packages containing substances carried in refrigerated liquid nitrogen shall, in addition, bear a label conforming to model No.2.2.</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> <p>If any substances have leaked and been spilled in a wagon/vehicle or container, it may not be reused until after it has been thoroughly cleaned and, if necessary, disinfected or decontaminated. Any other goods and articles carried in the same wagon/vehicle or container shall be examined for possible contamination.</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>		
Provided that diagnostic specimens are packed in accordance with this packing instruction, no other requirements of RID/ADR shall apply.		

P802(5): Replace "conforming to the construction, testing and filling requirements approved by the competent authority" with "conforming to the provisions of packing instruction P200" and "Gas cylinders" with "Cylinders, pressure drums and tubes".

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 carriage.		
The articles may also be carried 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).		

P904: Amend (1) to read:

"(1) Packagings according to packing instruction P001 or P002 conforming to the packing group III performance level".

4.1.4.2 **IBC01** Replace the heading "Special packing provision" by "Special packing provision specific to RID and ADR", and amend "B12" to read "BB1".

IBC02 Amend "B11" to read "BB2" and move it into a new row (to be added at the end) with the heading "Special packing provision specific to RID and ADR".

IBC04 Under "Special packing provision" delete B1.

IBC05 Under "Special packing provisions" delete B1 and B2.

IBC06: Under "Special packing provisions" delete B1 and B2 and add a new special packing 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" and in the additional requirement, delete "31HZ2".

IBC07 Under "Special packing provisions" delete B1 and B2.

IBC08 Under "Special packing provisions" delete B2.

IBC620 Amend the second sentence to read: "The following IBCs are authorized, provided that the general provisions of **4.1.1**, **4.1.2** and **4.1.3** and the special provisions of **4.1.8** are met."

4.1.4.3 Add a new packing instruction LP902 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 carriage.		
The articles may also be carried 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).		

4.1.6.7 Add the following line to the table:

Applicable paragraphs	Reference	Title of document
4.1.6.4 (d)	Annex A of EN849:1996/A2:2001	Transportable gas cylinders – Cylinder valves : Specifications and type testing – Amendment 2

4.1.7.0.1 Add a new paragraph to read:

"4.1.7.0.1 For organic peroxides, all receptacles shall be "effectively closed". Where significant internal pressure may develop in a package by the evolution of a gas, a vent may be fitted, provided the gas emitted will not cause danger, otherwise the degree of filling shall be limited. Any venting device shall be so constructed that liquid will not escape when the package is in an upright position and it shall be able to prevent ingress of impurities. The outer packaging, if any, shall be so designed as not to interfere with the operation of the venting device."

4.1.7.2.3 Add a new paragraph:

"4.1.7.2.3 Emergencies to be taken into account are self-accelerating decomposition and fire engulfment. To prevent explosive rupture of metal or composite IBCs with a complete metal casing, the emergency-relief devices shall be designed to vent all the decomposition products and vapours evolved during self-accelerating decomposition or during a period of not less than one hour of complete fire engulfment calculated by the equations given in 4.2.1.13.8."

4.1.8.2 Amend to read as follows:

"The definitions in 1.2.1 and the general packing provisions of 4.1.1.1 to 4.1.1.14, except 4.1.1.10 to 4.1.1.12 apply to infectious substances packages. However, liquids shall be filled into packagings, including IBCs, which have an appropriate resistance to the internal pressure that may develop under normal conditions of carriage."

4.1.8.3 Amend the beginning to read: "For UN 2814 and UN 2900, an itemized...".

4.1.8.5 Add a new paragraph to read:

"4.1.8.5 The provisions of this section do not apply to UN 3373 Diagnostic specimens (see packing instruction P650)".

4.1.10.4 **MP5** Amend the second sentence to read: "They shall not be packed together with other goods; this does not apply to UN No. 3373 DIAGNOSTIC SPECIMENS packed in accordance with P650 or to substances added...".

Chapter 4.2

In the title, add at the end: "AND MULTIPLE-ELEMENT GAS CONTAINERS (MEGCs)".

4.2.2.1 Do not apply to the English version.

4.2.2.7.1 Amend the beginning of the first sentence to read as follows: "Prior to filling the portable tank shall be inspected to ensure that it is authorized for the non-refrigerated liquefied gas...".

4.2.3.6.1 Amend the beginning of the first sentence to read as follows: "Prior to filling the portable tank shall be inspected to ensure that it is authorized for the refrigerated liquefied gas...".

4.2.4 Renumber the existing 4.2.4 as "4.2.5" and add the following text as new 4.2.4:

4.2.4 General provisions for the use of multiple-element gas containers (MEGCs)

4.2.4.1 This section provides general requirements applicable to the use of multiple-element gas containers (MEGCs) for the carriage of non-refrigerated gases.

4.2.4.2 MEGCs shall conform to the design, construction, inspection and testing requirements detailed in 6.7.5. The elements of MEGCs shall be periodically inspected according to the provisions set out in packing instruction P200 of 4.1.4.1 and in 6.2.1.5.

4.2.4.3 During carriage, MEGCs shall be protected against damage to the elements and service equipment resulting from lateral and longitudinal impact and overturning. If the elements and service equipment are so constructed as to withstand impact or overturning, they need not be protected in this way. Examples of such protection are given in 6.7.5.10.4.

4.2.4.4 The periodic testing and inspection requirements for MEGCs are specified in 6.7.5.12. MEGCs or their elements shall not be charged or filled after they become due for periodic inspection but may be carried after the expiry of the time limit.

4.2.4.5 Filling

4.2.4.5.1 Prior to filling, the MEGC shall be inspected to ensure that it is authorized for the gas to be carried and that the applicable provisions of RID/ADR have been met.

4.2.4.5.2 Elements of MEGCs shall be filled according to the working pressures, filling ratios and filling provisions specified in packing instruction P200 of 4.1.4.1 for

the specific gas being filled into each element. In no case shall a MEGC or group of elements be filled as a unit in excess of the lowest working pressure of any given element.

- 4.2.4.5.3 MEGCs shall not be filled above their maximum permissible gross mass.
- 4.2.4.5.4 Isolation valves shall be closed after filling and remain closed during carriage. Toxic gases (gases of groups T, TF, TC, TO, TFC and TOC) shall only be carried in MEGCs where each element is equipped with an isolation valve.
- 4.2.4.5.5 The opening(s) for filling shall be closed by caps or plugs. The leakproofness of the closures and equipment shall be verified by the filler after filling.
- 4.2.4.5.6 MEGCs shall not be offered for filling:
- (a) when damaged to such an extent that the integrity of the pressure receptacles or its structural or service equipment may be affected;
 - (b) unless the pressure receptacles and its structural and service equipment has been examined and found to be in good working order; and
 - (c) unless the required certification, retest, and filling markings are legible.
- 4.2.4.6 Charged MEGCs shall not be offered for carriage;
- (a) when leaking;
 - (b) when damaged to such an extent that the integrity of the pressure receptacles or its structural or service equipment may be affected;
 - (c) unless the pressure receptacles and its structural and service equipment has been examined and found to be in good working order; and
 - (d) unless the required certification, retest, and filling markings are legible.
- 4.2.4.7 Empty MEGCs that have not been cleaned and purged shall comply with the same requirements as MEGCs filled with the previous substance."

Renumber subsequent paragraphs and sub-paragraphs accordingly.

Chapter 4.3

- 4.3.3.1.1 In the table, under "Tank code", for "P", amend "gases dissolved under pressure" to read "dissolved gases".
- 4.3.3.2 Amend to read as follows:
- "4.3.3.2 *Filling conditions and test pressures***
- 4.3.3.2.1 The test pressure for tanks intended for the carriage of compressed gases shall be at least one and one half times the working pressure as defined in 1.2.1 for pressure receptacles.

4.3.3.2.2. The test pressure for tanks intended for the carriage of:

- high pressure liquefied gases; and
- dissolved gases

shall be such that, when the shell is filled to the maximum filling ratio, the pressure reached in the shell by the substance at 55° C for tanks with thermal insulation or 65° C for tanks without thermal insulation does not exceed the test pressure.

4.3.3.2.3 The test pressure for tanks intended for the carriage of low pressure liquefied gases will be:

- (a) If the tank is equipped with thermal insulation, at least equal to the vapour pressure, reduced by 0.1 MPa (1 bar) of the liquid at 60 °C, but not less than 1 MPa (10 bar);
- (b) If the tank is not equipped with thermal insulation, at least equal to the vapour pressure, reduced by 0.1 MPa (1 bar), of the liquid at 65 °C, but not less than 1 MPa (10 bar).

The maximum permissible mass of contents per litre of capacity is calculated as follows:

Maximum permissible mass of contents per litre of capacity = 0.95 x density of the liquid phase at 50 °C (in kg/l)

Moreover the vapour phase shall not disappear below 60 °C.

If the shells are not more than 1.5 m in diameter, the values of the test pressure and maximum filling ratio conforming to packing instruction P200 in 4.1.4.1 shall be applicable.

4.3.3.2.4 The test pressure for tanks intended for the carriage of refrigerated liquefied gases shall be not less than 1.3 times the maximum allowable working pressure and indicated on the tank but not less than 300 kPa (3 bar) (gauge pressure); for tanks with vacuum insulation the test pressure shall be not less than 1.3 times the maximum allowable working pressure increased by 100 kPa (1 bar)."

4.3.3.2.5 Amend the text before the table as follows:

"4.3.3.2.5 *Table of gases and gas mixtures which may be carried in fixed tanks (tank-vehicles), battery-vehicles, demountable tanks [tank-wagons, battery-wagons], tank-containers and MEGCs indicating the minimum test pressure for tanks and as far as applicable the filling ratio*

In the case of gases and gas mixtures classified under n.o.s. entries, the values of the test pressure and the filling ratio shall be prescribed by the expert approved by the competent authority.

When shells for compressed or high pressure liquefied gases have been subjected to a test pressure lower than shown in the table, and the tanks are fitted with thermal insulation, a lower maximum load may be prescribed by the expert approved by the competent authority, provided that the pressure reached in the tank by the substance at 55 °C does not exceed the test pressure stamped on the tank."

In the table, amend the following rows:

UN No.	Name	Classification code	Minimum test pressure for tanks				Filling ratio
			With thermal insulation		Without thermal insulation		
			MPa	bar	MPa	bar	
1008	Boron trifluoride	2 TC	22.5	225	22.5	225	0.715
			30	300	30	300	0.86
1859	Silicon tetrafluoride	2 TC	20	200	20	200	0.74
			30	300	30	300	1.10
1962	Ethylene	2 F	12	120			0.25
			22.5	225			0.36
					22.5	225	0.34
					30	300	0.37
1982	Tetrafluoromethane (Refrigerant gas R14)	2 A	20	200	20	200	0.62
			30	300	30	300	0.94
2036	Xenon	2 A	12	120			1.30
					13	130	1.24
2193	Hexafluoroethane, (Refrigerant gas R116)	2 A	16	160			1.28
			20	200			1.34
					20	200	1.10
2203	Silane ^b	2 F	22.5	225	22.5	225	0.32
			25	250	25	250	0.36
2417	Carbonyl fluoride	2 TC	20	200	20	200	0.47
			30	300	30	300	0.70
2451	Nitrogen trifluoride	2 O	20	200	20	200	0.50
			30	300	30	300	0.75
3374	Acetylene, solvent free	2 F	only in battery-vehicles/battery-wagons and MEGCs composed of receptacles				

^b *Considered as pyrophoric*

4.3.4.1.2

Add the following paragraph at the end of 4.3.4.1.2:

"The list of tank codes permitted under the hierarchy of tanks given in the table above is not necessarily complete. This table is limited to the tank codes that are indicated in Table A of Chapter 3.2. Tanks with tank codes different from those indicated in this table or in Table A of Chapter 3.2 may also be used provided that the first part of the code (L or S) remains unchanged and that any other element (number or letter) of parts 2 to 4 of these tank codes correspond to a level of safety at least equivalent to the corresponding element of the tank code indicated in Table A of Chapter 3.2, according to the following increasing order:

Part 2: Calculation pressure

G → 1.5 → 2.65 → 4 → 10 → 15 → 21 bar

Part 3: Openings

A → B → C → D

Part 4: Safety valves/devices

V → F → N → H

For example, a tank with the tank code L10CN is authorized for the carriage of a substance to which the tank code L4BN has been assigned.

In the table of 4.3.4.1.2, delete the following tank codes under "Hierarchy of tanks":

For LGAV, delete: LGAH, LGBH, L1.5AH and L1.5BH.

For LGBV, delete: LGBH and L1.5BH.

For LGBF, delete: L1.5BH and LGBH.

For L1.5BN, delete: L1.5BH.

4.3.4.1.3 Amend the first paragraph to read as follows:

"The following substances and groups of substances in respect of which a (+) is given after the tank code in Column (12) of Table A in Chapter 3.2 are subject to special provisions. In that case the alternate use of the tanks for other substances and groups of substances is permitted only where this is specified in the certificate of type approval. The hierarchy in 4.3.4.1.2 is not applicable. However, with due regard to the special provisions indicated in Column (13) of Table A in Chapter 3.2, higher value tanks according to the provisions at the end of the table in 4.3.4.1.2 may be used."

4.3.5 TU11 Amend the second sentence of special provision TU11 to read:

"A maximum filling temperature of 80 °C is allowed provided that smoulder spots are prevented and that the following conditions are met."

TU14 Amend to read:

"The protective caps of closures shall be locked during carriage."

Chapter 4.4

4.4.2.1 Add "4.3.4.1" to the paragraphs listed.
