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Working Party on the Transport of Dangerous Goods

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HARMONIZATION WITH THE UNITED NATIONS
MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS

Draft proposal of amendments to Part 4 of RID/ADR/ADN

Prepared by the UNECE secretariat

NOTE: The proposal is based on ST/SG/AC.10/29/Add.1.
Stricken out text means that the amendment does not seem relevant for RID/ADR/ADN.
Text in square brackets means that the relevance of the text for RID/ADR/AND should be discussed by the Working Group of the Joint Meeting.

PART 4

Chapter 4.1

4.1.1.8 Amend to read as follows:

"4.1.1.8 Liquids may only be filled into inner packagings which have an appropriate resistance to internal pressure that may be developed under normal conditions of ~~transport~~ carriage. Where pressure may develop in a package by the emission of gas from the contents (as a result of temperature increase or other causes), the packaging, including IBC, may be fitted with a vent. A venting device shall be fitted if dangerous overpressure may develop due to normal decomposition of substances. However, the gas emitted shall not cause danger on account of its toxicity, its flammability, the quantity released, etc. The vent shall be so designed that, when the packaging, including IBC, is in the attitude in which it is intended to be ~~transported~~ carried, leakages of liquid and the penetration of foreign matter are prevented under normal conditions of ~~transport~~ carriage. Venting of the package is not permitted for air transport."

4.1.1.9 Insert the words "or routinely maintained" after "repaired", in the first and last sentences.

~~4.1.1.15 Add a new paragraph to read as follows:~~

~~"4.1.1.15 For plastics drums and jerricans, rigid plastics IBCs and composite IBCs with plastics inner receptacles, unless otherwise approved by the competent authority, the period of use permitted for the transport of dangerous substances shall be five years from the date of manufacture of the receptacles, except where a shorter period of use is prescribed because of the nature of the substance to be transported".~~

~~Renumber subsequent paragraphs and sub-paragraphs accordingly.~~

~~4.1.2.3 Delete this paragraph and renumber the remaining paragraphs accordingly.~~

4.1.2.4 Replace "rigid plastics and composite IBCs" with " rigid plastics, composite and flexible IBCs" in the first sentence.

4.1.3.4 Add a new line for large packagings, immediately before the line for IBCs, as follows:
"Large packagings
Flexible plastics: 51H (outer packaging)"

4.1.3.5 In the first sentence, delete "outer" (twice) and "in a combination packaging" and add ";1A2" after "4G" and ";1A2V, 1A2U or 1A2W" after "4GW" in the examples between brackets.

~~4.1.3.6 Replace "Cylinders, bundles of cylinders, pressure drums and tubes" with "All cylinders, tubes, pressure drums and bundles of cylinders".~~

4.1.4.1 **P002** Extend the application of note "Se" to steel, aluminium and solid plastics boxes.
Under "Special packing provisions":
In special packing provision **PP9**, add a new sentence at the end to read as follows:
"For UN No. 3175, the leakproofness test is not required when the liquids are fully absorbed in solid material contained in sealed bags."

Add the following two new special provisions:

PP84 For UN [No. 1057](#), rigid outer packagings meeting the packing group II performance level shall be used. The packagings shall be designed and constructed and arranged to prevent movement, inadvertent ignition of the devices or inadvertent release of flammable gas or liquid.

PP85 For UN Nos. 1748, 2208 and 2880, if bags are used as single packagings they shall be adequately separated to allow for the dissipation of heat."

P200 In paragraph [2.3\(d\)](#), insert a note to read as follows:

"NOTE: For pressure receptacles which make use of composite materials, the periodic inspection frequencies shall be as determined by the competent authority which approved the receptacles."

In paragraph [\(4.9\)](#), under "Gas specific provisions", add a new provision "t" to read as follows:

- "t: (i) The wall thickness of pressure receptacles shall be not less than 3 mm.
- (ii) Prior to ~~transport~~-[carriage](#) it shall be ensured that the pressure has not risen due to potential hydrogen generation."

[Rename existing provision "t" as "\[ta\]" and modify corresponding reference in Table 2 accordingly \(UN No. 1965\).](#)

Amendments to the tables:

~~In Tables 2 and 3, rearrange the order of the columns listed hereafter according to the sequence in Table 1, i.e. Cylinders, Tubes, Pressure drums, Bundles of cylinders, MEGCs.~~

~~Delete all asterisks on LC₅₀ values and delete the associated footnote.~~

Amend Table 1 as follows:

UN No.	Column	Amendment
1953, 1955, 3303, 3304, 3305 and 3306	LC ₅₀	Add "≤ 5000"
2600	LC ₅₀	Add "between 3760 and 5000"

Amend Table 2 as follows:

UN No.	Column	Amendment
1010 (third entry)	Name and description	replace "BUTADIENE, STABILIZED (mixtures of 1,3-butadiene and hydrocarbons)" with Amend the third entry to read: "BUTADIENES AND HYDROCARBON MIXTURE, STABILIZED, containing more than 40% butadienes".
	Test pressure, bar	Delete "10" (third entry only)
	Filling ratio	Delete "0.50"
	Special packing provisions	Add "v," (third entry)
3160, 3162, 3307, 3308, 3309 and 3310	LC ₅₀	Add "≤ 5000"
3083	Special packing provisions	Delete "k"

Amend Table 3 as follows:

UN No.	Column	Amendment
1051	LC ₅₀	Replace "140" with "40"
1052	Special packing provisions	Add "t"
1746	LC ₅₀	Replace "180" with "50"

P203 Replace the existing [paragraphs \(4\) to \(8\) of](#) packing instruction P203 with the following:

P203	PACKING INSTRUCTION	P203
<p>This instruction applies to Class 2 refrigerated liquefied gases in closed cryogenic receptacles. Refrigerated liquefied gases in open cryogenic receptacles shall conform to the construction, testing and filling requirements approved by the competent authority.</p> <p>For closed cryogenic receptacles, the general requirements of 4.1.6.1 shall be met.</p> <p>(4) Closed cryogenic receptacles constructed as specified in Chapter 6.2 are authorized for the transport carriage of refrigerated liquefied gases.</p> <p>The closed cryogenic receptacles shall be so insulated that they do not become coated with frost.</p> <p>(4) (5) Test pressure</p> <p>Refrigerated liquids shall be filled in closed cryogenic receptacles with the following minimum test pressures:</p> <p>(a) For closed cryogenic receptacles with vacuum insulation, the test pressure shall not be less than 1.3 times the sum of the maximum internal pressure of the filled receptacle, including during filling and discharge, plus 100 kPa (1 bar);</p> <p>(b) For other closed cryogenic receptacles, the test pressure shall be not less than 1.3 times the maximum internal pressure of the filled receptacle, taking into account the pressure developed during filling and discharge.</p>		

(2.6) Degree of filling

For non-flammable, non-toxic refrigerated liquefied gases ([classification codes 3A and 3O](#)) the volume of liquid phase at the filling temperature and at a pressure of 100 kPa (1 bar) shall not exceed 98% of the water capacity of the pressure receptacle.

For flammable refrigerated liquefied gases ([classification code 3F](#)) the degree of filling shall remain below the level at which, if the contents were raised to the temperature at which the vapour pressure equalled the opening pressure of the relief valve, the volume of the liquid phase would reach 98% of the water capacity at that temperature.

(3.7) Pressure-relief devices

Closed cryogenic receptacles shall be fitted with at least one pressure-relief device.

(4.8) Compatibility

Materials used to ensure the leakproofness of the joints or for the maintenance of the closures shall be compatible with the contents. ~~In the case of receptacles intended for the transport of oxidizing gases, (i.e. with a subsidiary risk of 5.1) these materials shall not react with these gases in a dangerous manner.~~ [For oxidizing gases, classification code 3O, see also \(3\) above.](#)

(9) [Periodic inspection](#)

[\[Combine existing text of \(7\) and \(8\).\]](#)

[Renumber \(9\) to \(13\) accordingly.](#)

P400 In paragraph (1), at the end of the second sentence, replace "in strong wood, fibreboard or plastics boxes" with "in strong rigid outer packagings", and in the third sentence, replace "box" with "outer packaging".

At the end of the table, add a new row with the heading "Special packing provisions" and a new special packing provision PP86, as follows:

"Special packing provisions

PP86: For UN Nos. 3392 and 3394, air shall be eliminated from the vapour space by nitrogen or other means."

P403 Under "Inner packagings", replace "~~and~~ shall have threaded closures" with "[shall be hermetically sealed](#) (e.g. by taping or by threaded closures)".

At the end of the table, add a new row with the heading "Special packing provisions" and a new special packing provision PP83, as follows:

"Special packing provisions

PP83 For UN No. 2813, waterproof bags containing not more than 20 g of substance for the purposes of heat formation may be packaged for ~~transport~~ [carriage](#). Each waterproof bag shall be sealed in a plastics bag and placed within an intermediate packaging. No outer packaging shall contain more than 400 g of substance. Water or liquid which may react with the water reactive substance shall not be included in the packaging."

P404 In the list of pyrophoric solids, add UN Nos. 3391 to 3400.

At the end of the table, add a new row with the heading "Special packing provisions" and a new special packing provision PP86, as follows:

"Special packing provisions"

PP86 For UN Nos. 3391 and 3393, air shall be eliminated from the vapour space by nitrogen or other means."

P407 In the text before "Additional requirement", amend the beginning of the ~~second-last~~ sentence to read "The maximum gross mass of the package shall not exceed...".

P410 ~~Under "Single packagings", apply note "3" to steel, aluminium and solid plastics boxes.~~

Under "Special packing provisions", add PP83 (same wording as in P403).

P504 Delete special provision PP29 and ~~add a new~~ modify PP10 as to read follows:

PP10 For UN Nos. 2014 Packing Group II, 2984 Packing Group III and 3149, the packaging shall be vented".

P520 In column OP8, replace "~~200²200^b~~" with "~~400²400^b~~" and amend note ~~2-b~~ to read:
"~~2-b~~ 60 kg for jerricans/200 kg for boxes and, for solids, 400 kg in combination packagings with outer packagings comprising boxes (4C1, 4C2, 4D, 4F, 4G, 4H1 and 4H2) and with inner packagings of plastics or fibre with a maximum net mass of 25 kg."

P601 In (3), replace "Combination packagings" with "Packagings consisting of:" and amend the first paragraph to read as follows:

"Outer packagings: Steel or plastic drums, removable head (1A2 or 1H2), tested in accordance with the test requirements in 6.1.5 at a mass corresponding to the mass of the assembled package either as a packaging intended to contain inner packagings, or as a single packaging intended to contain solids or liquids, and marked accordingly."

~~At the end of the table~~ Before the row "Special packing provisions specific to RID and ADR", add a new row with the heading "Special packing provisions" and a new special packing provision PP82, as follows:

"Special packing provision"

PP82 For UN No.1744, glass inner packagings with a capacity of not more than 1.3 litres may be used in a permitted outer packaging with a maximum gross mass of 25 kg."

P602 In paragraph (3), amend the text between brackets in the first line, to read: (1A1, 1B1, 1N1, 1H1, 6HA1 or 6HH1)".

P620 In (a)(iii), insert "either" before "individually" and "or separated" after "wrapped" at the end.


In (b), replace "An outer packaging" with "A rigid outer packaging" in the first sentence and replace "at least" with "not less than" in the second sentence.

Under 2, replace existing "(a), (b), (i), (ii), (iii)" with the following:

"(a) Substances consigned at ambient temperatures or at a higher temperature. Primary receptacles shall be of glass, metal or plastics. Positive means of ensuring a leakproof seal shall be provided, e.g. a heat seal, a skirted stopper or a metal crimp seal. If screw caps are used, they shall be secured by positive means, e.g., tape, paraffin sealing tape or manufactured locking closure;

- (b) Substances consigned refrigerated or frozen. Ice, dry ice or other refrigerant shall be placed around the secondary packaging(s) or alternatively in an overpack with one or more complete packages marked in accordance with 6.3.1.1. Interior supports shall be provided to secure secondary packaging(s) or packages in position after the ice or dry ice has dissipated. If ice is used, the outer packaging or overpack shall be leakproof. If dry ice is used, the outer packaging or overpack shall permit the release of carbon dioxide gas. The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the refrigerant used;
- (c) Substances consigned in liquid nitrogen. Plastics primary receptacles capable of withstanding very low temperature shall be used. The secondary packaging shall also be capable of withstanding very low temperatures, and in most cases will need to be fitted over the primary receptacle individually. Provisions for the consignment of liquid nitrogen shall also be fulfilled. The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the liquid nitrogen.
- (d) Lyophilized substances may also be ~~transported~~carried in primary receptacles that are flame-sealed glass ampoules or rubber-stoppered glass vials fitted with metal seals;"

P650 Replace the existing P650 with the following:

P650	PACKING INSTRUCTION	P650
This packing instruction applies to UN <u>No.</u> 3373		
<p>(1) The packaging shall be of good quality, strong enough to withstand the shocks and loadings normally encountered during transport carriage, including transshipment between [ADR: vehicles or containers and between vehicles or containers and warehouses] [RID: wagons or containers and between wagons or containers and warehouses] [ADN: cargo transport units and between cargo transport units and ware houses] 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 to prevent any loss of contents that might be caused under normal conditions of transport carriage by vibration or by changes in temperature, humidity or pressure.</p> <p>(2) The packaging shall consist of three components:</p> <ul style="list-style-type: none">(a) a primary receptacle;(b) a secondary packaging; and(c) an outer packaging. <p>(3) Primary receptacles shall be packed in secondary packagings in such a way that, under normal conditions of carriage 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 compromise the integrity of the cushioning material or of the outer packaging.</p> <p>(4) For carriage transport, the mark illustrated below shall be displayed on the external surface of the outer packaging on a background of a contrasting colour and shall be clearly visible and legible. The width of the line shall be at least 2 mm; the letters and numbers shall be at least 6 mm high.</p> <div data-bbox="662 1209 1005 1556" style="text-align: center;"><p>UN3373</p></div>		

P650	PACKING INSTRUCTION (<i>cont'd</i>)	P650
	<p>(5) 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 of the Model Regulations except that the height of the drop shall not be less than 1.2 m.</p> <p>(6) For liquid substances:</p> <ul style="list-style-type: none"> (a) The primary receptacle(s) shall be leakproof; (b) The secondary packaging shall be leakproof; (c) If multiple fragile primary receptacles are placed in a single secondary packaging, they shall be either individually wrapped or separated to prevent contact between them; (d) Absorbent material shall be placed between the primary receptacle(s) and the secondary packaging. The absorbent material shall be in quantity sufficient to absorb the entire contents of the primary receptacle(s) so that any release of the liquid substance will not compromise the integrity of the cushioning material or of the outer packaging; (e) The primary receptacle or the secondary packaging shall be capable of withstanding, without leakage, an internal pressure of 95 kPa (0.95 bar). <p>(7) For solid substances:</p> <ul style="list-style-type: none"> (a) The primary receptacle(s) shall be siftproof; (b) The secondary packaging shall be siftproof; (c) If multiple fragile primary receptacles are placed in a single secondary packaging, they shall be either individually wrapped or separated to prevent contact between them. <p>(8) Refrigerated or frozen specimens: Ice, dry ice and liquid nitrogen:</p> <ul style="list-style-type: none"> (a) When dry ice or liquid nitrogen is used to keep specimens cold, all applicable requirements of these Regulations RID/ADR/ADN shall be met. When used, ice or dry ice shall be placed outside the secondary packagings or in the outer packaging or an overpack. Interior supports shall be provided to secure the secondary packagings in the original position after the ice or dry ice has dissipated. If ice is used, the outside packaging or overpack shall be leakproof. If carbon dioxide, solid (dry ice) is used, the packaging shall be designed and constructed to permit the release of carbon dioxide gas to prevent a build-up of pressure that could rupture the packagings and shall be marked "Carbon dioxide, solid" or "Dry ice". (b) The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the refrigerant used as well as the temperatures and the pressures which could result if refrigeration were lost. <p>(9) Infectious substances assigned to UN No. 3373 which are packed and marked in accordance with this packing instruction are not subject to any other requirement in these Regulations RID/ADR/ADN.</p> <p>(10) Clear instructions on filling and closing such packages shall be provided by packaging manufacturers and subsequent distributors to the consignor or to the person who prepares the package (e.g. patient) to enable the package to be correctly prepared for transport carriage.</p>	

P903 Add the following paragraph after the sentence "Packagings conforming to the packing group II performance level.":

"In addition, batteries employing a strong, impact resistant outer casing of a gross mass of 12 kg or more, and assemblies of such batteries, may be packed in strong outer packagings, in protective enclosures (e.g., in fully enclosed or wooden slatted crates) unpackaged or on pallets. Batteries shall be secured to prevent inadvertent movement, and the terminals shall not support the weight of other superimposed elements."

P904 Amend to read as follows:

P904	PACKING INSTRUCTION	P904
This packing instruction applies to UN No. 3245 .		
<p>The following packagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met:</p> <ul style="list-style-type: none">(1) Packagings according to P001 or P002 conforming to the packing group III performance level.(2) Outer packagings, which need not conform to the packaging test requirements of Part 6, but conforming to the following:<ul style="list-style-type: none">(a) An inner packaging comprising:<ul style="list-style-type: none">(i) a watertight primary receptacle(s);(ii) a watertight secondary packaging which is leakproof;(iii) absorbent material placed between the primary receptacle(s) and the secondary packaging. The absorbent material shall be in a quantity sufficient to absorb the entire contents of the primary receptacle(s) so that any release of the liquid substance will not compromise the integrity of the cushioning material or of the outer packaging;(iv) if multiple fragile primary receptacles are placed in a single secondary packaging they shall be individually wrapped or separated to prevent contact between them.(b) An outer packaging shall be strong enough for its capacity, mass and intended use and with a smallest external dimension of at least 100 mm.		
<p>Additional requirement</p> <p><u>Dry ice and liquid nitrogen</u></p> <p>When carbon dioxide, solid, (dry ice) is used as a refrigerant, the packaging shall be designed and constructed to permit the release of the gaseous carbon dioxide to prevent the build up of pressure that could rupture the packaging.</p> <p>Substances consigned in liquid nitrogen or dry ice shall be packed in primary receptacles that are capable of withstanding very low temperatures. The secondary packaging shall also be capable of withstanding very low temperatures and, in most cases, will need to be fitted over the primary receptacle individually.</p>		

P906(1)
and (2)

~~After "PCBs", insert "or polyhalogenated biphenyls or terphenyls" in (1) and
", polyhalogenated biphenyls or terphenyls" in (2).~~

4.1.4.2 **IBC08** In special provision B6, insert "1408," after "1386,".

Add a new special packing provision B13, to read as follows:

"**B13** For UN Nos. 1748, 2208 and 2880, ~~transport~~ carriage by sea in IBCs is prohibited."

IBC520 Insert the following new entries:

UN No.	Organic peroxide	Type of IBC	Maximum quantity (litres)	Control temperature	Emergency temperature
3119	Dicyclohexylperoxydicarbonate, not more than 42% as a stable dispersion, in water	31A	1250	+ 10 °C	+ 15 °C
3110	ORGANIC PEROXIDE, TYPE F, SOLID Dicumyl peroxide	31A 31H 31HA1	2000		
3120	ORGANIC PEROXIDE, TYPE F, SOLID, TEMPERATURE CONTROLLED				

4.1.4.3 **LP02** Insert "Flexible plastics (51H)^{3-c}" in the column for "Large outer packagings", and a note ~~3-c~~ 3-c under the table, as follows: "~~3-c~~ 3-c To be used with flexible inner packagings only."

~~4.1.6.1.2~~ 6.2.1.1.2 Replace "material" with "mass" in the ~~third~~ first sentence.

In (b), insert "porous" before "mass". ~~The last sentence of subparagraph (b) becomes applicable to the whole paragraph.~~

~~4.1.6.1.4~~ ~~Amend as follows: "...have been performed. The change of service for compressed and liquefied gases shall be in accordance with ISO 11621:1997, as applicable. In addition, a pressure receptacle...".~~

[4.1.6.10 Refer to ISO11621:1997 for compliance with 4.1.6.2?]

~~The existing second paragraph of 4.1.6.1.4 becomes new paragraph 4.1.6.1.5. Insert "Shutt-off" before "valves" at the beginning of the second sentence.~~

~~Renumber subsequent paragraphs accordingly.~~

~~4.1.6.1.7~~ 4.1.6.4 Amend the beginning of the first sentence to read as follows: " Valves [cocks] shall be designed and constructed in such a way that they are inherently able to withstand damage without release of the contents or shall [effectively] be protected from damage which could cause...".

Delete subparagraph d) and rename subsequent subparagraphs accordingly.

~~Amend the end of the last paragraph to read: "...for valves with inherent protection, the requirements of annex B...".~~

[Add at the end: "For receptacles with valves as described in (b) and (c), the requirements of ISO 11 117:1998 shall be met; for valves with inherent protection, the requirements of Annex B of ISO 10 297:1999 shall be met]

~~4.1.6.1.9~~ Amend the first sentence to read as follows: "~~Refillable pressure receptacles other than cryogenic receptacles, shall be periodically inspected according to the provisions of 6.2.1.5 and packing instruction P200~~".

~~Delete "charged or" before "filled" in the second sentence.~~

~~4.1.6.1.10~~ Amend the first paragraph to read as follows:

~~"Repairs shall be consistent with the fabrication and testing requirements of the applicable design and construction standards and are only permitted as indicated in the relevant periodic inspection standards specified in 6.2.2.4. Pressure receptacles, other than the jacket of closed cryogenic receptacles, shall not be subjected to repairs of any of the following:"~~ [\[ref. ADR: 4.1.6.7\]](#)

~~4.1.6.1.11(b)~~ [4.1.6.8 \(b\)](#) Replace "and" with "or" at the end.

~~4.1.6.1.12~~ [4.1.6.9](#) Replace "Charged" with "Filled" at the beginning of the first sentence and replace "and" with "or" at the end of subparagraph (c).

4.1.7.2.1 Amend to read: "The currently assigned organic peroxides specifically listed in packing instruction IBC520 may be ~~transported~~ [carried](#) in IBCs in accordance with this packing instruction."

4.1.8.3 Add the following sentence at the end:
"When the infectious substances to be ~~transported~~ [carried](#) are unknown, but suspected of meeting the criteria for inclusion in category A and assignment to UN [Nos](#) 2814 or ~~UN~~ 2900, the words "suspected category A infectious substance" shall be shown, in parenthesis, following the proper shipping name on the document inside the outer packaging."

4.1.9.1.4 Replace "and intermediate bulk containers" with "intermediate bulk containers and ~~conveyances~~ [\[ADR: vehicles\]](#) [\[RID: wagons\]](#) [\[ADN: conveyance\]](#)".

4.1.9.2.1 Replace "Industrial package Type 1 (Type IP-1), Industrial package Type 2 (Type IP-2), Industrial package Type 3 (Type IP-3)" with " Type IP-1 package, Type IP-2 package, Type IP-3 package,".

Chapter 4.2

4.2.1 Insert "Class 1 and" before "Classes 3 to 9".

4.2.1.1 ~~Amend~~ [At](#) the end of the first sentence ~~to read: "... transport of substances of Classes 1, 3, 4, 5, 6, 7, 8 and 9."~~ [inset "1", before "3"](#)

4.2.1.4 Amend the second sentence to read as follows:
"When necessary, the shell shall be thermally insulated."

4.2.1.9.5.1 Amend the sentence before the formula to read as follows:
"The maximum degree of filling (in %) for solids ~~transported~~ [carried](#) above their melting points and for elevated temperature liquids shall be determined by the following formula:".

4.2.1.18 Add the following new paragraphs:

4.2.1.18 *Additional provisions applicable to the ~~transport~~ [carriage](#) of solid substances ~~transported~~ [carried](#) above their melting point*

4.2.1.18.1 Solid substances ~~transported-carried~~ or offered for ~~transport-carriage~~ above their melting point which are not assigned a portable tank instruction in column (10) of the ~~Dangerous Goods List Table A of Chapter 3.2~~ or when the assigned portable tank instruction does not apply to ~~transport-carriage~~ at temperatures above their melting point may be ~~transported-carried~~ in portable tanks provided that the solid substances are classified in ~~divisions-Classes~~ 4.1, 4.2, 4.3, 5.1, ~~or-6.1, or-classes-8 or 9~~ and have no subsidiary risk other than that of ~~Division-Classes~~ 6.1 or Class 8 and are in packing group II or III.

4.2.1.18.2 Unless otherwise indicated in the ~~Dangerous Goods List of Table A of Chapter 3.2~~, portable tanks used for the ~~transport-carriage~~ of these solid substances above their melting point shall conform to the provisions of portable tank instruction T4 for solid substances of packing group III or T7 for solid substances of packing group II. A portable tank which affords an equivalent or greater level of safety may be selected according to 4.2.5.2.5. The maximum degree of filling (in %) shall be determined according to 4.2.1.9.5 (TP3) ".

4.2.5.2.1 Replace "2" with "1" at the end of the first sentence.

4.2.5.2.2 Insert "Class 1 and" before "Classes 3 to 9" at the beginning of the first sentence.

4.2.5.2.5 For portable tank instructions T2 and T4, delete "T6" under "Portable tank instructions also permitted".

4.2.5.2.6 Insert the following paragraph after the title:

"Portable tank instructions specify the requirements applicable to a portable tank when used for the ~~transport-carriage~~ of specific substances. Portable tank instructions T1 to T22 specify the applicable minimum test pressure, the minimum shell thickness (in mm reference steel), and the pressure-relief and bottom-opening requirements."

In the table for portable tank instruction "T1-T22" add a reference "^a" to a footnote at the end of the heading "Pressure-relief requirements". The footnote will read as follows:

^a *When the word "Normal" is indicated, all the requirements of 6.7.2.8 apply except for 6.7.2.8.3."*

T23 ~~For UN 3109, in the entry for Pinanyl hydroperoxyde, replace "50%" with "56%".~~

T50 In the table for portable tank instruction "T50":

- In the heading "Max. allowable working pressure (bar) Small; Bare; Sunshield; Insulated", add at the end "respectively^a" and a footnote to read as follows:

^a *"Small" means tanks having a shell with a diameter of 1.5 metres or less; "Bare" means tanks having a shell with a diameter of more than 1.5 metres without insulation or sun shield (see 6.7.3.2.12); "Sunshield" means tanks having a shell with a diameter of more than 1.5 metres with sun shield (see 6.7.3.2.12); "Insulated" means tanks having a shell with a diameter of more than 1.5 metres with insulation (see 6.7.3.2.12); (See definition of "Design reference temperature" in 6.7.3.1)."*

- Add a reference "^b" to a footnote at the end of the heading "Pressure-relief requirements", and a footnote to read as follows:

^{nb} The word "Normal" in the pressure relief requirements column indicates that a frangible disc as specified in 6.7.3.7.3 is not required."

- Add a new row as follows:

UN No.	Non-refrigerated liquefied gases	Max. allowable working pressure (bar) Small; Bare; Sunshield; Insulated	Openings below liquid level	Pressure-relief requirements (see 6.7.3.7)	Maximum filling ratio
1010	Butadienes and hydrocarbon mixture, stabilized	See MAWP definition in 6.7.3.1	Allowed	Normal	See 4.2.2.7

4.2.5.3 **TP3** Amend to read as follows: "The maximum degree of filling (in %) for solids ~~transported~~carried above their melting points and for elevated temperature liquids shall be determined in accordance with 4.2.1.9.5."

TP5 Amend to read as follows: "The degree of filling prescribed in 4.2.3.6 shall be met."

Add the following new portable tank instructions:

TP32 For UN Nos. 0331, 0332 and 3375, portable tanks may be used subject to the following conditions:

- To avoid unnecessary confinement, each portable tank constructed of metal shall be fitted with a pressure-relief device that may be of the reclosing spring loaded type, a frangible disc or a fusible element. The set to discharge or burst pressure, as applicable, shall not be greater than 2.65 bar for portable tanks with minimum test pressures greater than 4 bar;
- The suitability for ~~transport~~carriage in tanks shall be demonstrated. One method to evaluate this suitability is test 8 (d) in Test Series 8 (see *Manual of Tests and Criteria*, Part 1, Sub-section 18.7).
- Substances shall not be allowed to remain in the portable tank for any period that could result in caking. Appropriate measures shall be taken to avoid accumulation and packing of substances in the tank (e.g. cleaning, etc).

TP33 The portable tank instruction assigned for this substance applies for granular and powdered solids and for solids which are filled and discharged at temperatures above their melting point which are cooled and ~~transported~~carried as a solid mass. For solids which are ~~transported~~carried above their melting point see 4.2.1.18.

TP34 Portable tanks need not be subjected to the impact test in 6.7.4.14.1 if the portable tank is marked "NOT FOR RAIL TRANSPORT" on the plate specified in 6.7.4.15.1 and also in letters of at least 10 cm high on both sides of the outer jacket."
