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Working Party on the Transport of Dangerous Goods

<u>Joint Meeting of the RID Safety Committee and the</u> <u>Working Party on the Transport of Dangerous Goods</u> (Geneva, 1-10 September 2003)

HARMONIZATION WITH THE UN RECOMMENDATIONS ON THE TRANSPORT OF DANGEROUS GOODS

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Addendum 4

Proposal of amendments to Part 4 of RID/ADR/ADN

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 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

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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 carried, leakages of liquid and the penetration of foreign matter are prevented under normal conditions of carriage.

NOTE: 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.
- 4.1.2.4 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 ";1A2U, 1A2U or 1A2W" after "4GW" in the examples between brackets.
- 4.1.4.1 **P002** 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 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.".

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

Amendments to the tables:

Amend Table 1 as follows:

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

Amend Table 2 as follows:

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

Amend Table 3 as follows:

UN No.	Column	Amendment
1051	LC ₅₀	Replace "140" with "40"
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					
(4)		Closed cryogenic receptacles constructed as specified in Chapter 6.2 are authorized for the carriage of refrigerated liquefied gases.					
(5)	5) Test pressure						
	Refrigerated liquids shall be filled in closed cryogenic receptacles with the following min test pressures:						
	(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);					
	(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.					

P203	PACKING INSTRUCTION P203
(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.
(7)	Pressure-relief devices
	Closed cryogenic receptacles shall be fitted with at least one pressure-relief device.
(8)	Compatibility
	Materials used to ensure the leakproofness of the joints or for the maintenance of the closures shall be compatible with the contents. For oxidizing gases, classification code 3O, see also (3) above.
(9)	Periodic inspection
	Combine existing text of (7) and (8).
Renum	ber (9) to (13) accordingly.
	[P205 Delate P205]

[**P205** Delete P205.]

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 " 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 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 Replace ", 2881, 3052, 3200 and 3203)." with ", 2881, 3200 and 3461)." at the end of the first sentence.

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 last sentence to read "The maximum gross mass of the package shall not exceed...".
- P410 Under "Special packing provisions", add PP83 (same wording as in P403).
- **P504** Delete special provision PP29 and modify PP10 as to read follows:

"PP10 For UN Nos 2014 [, 2984] and 3149, the packaging shall be vented".

P520 In column OP8, replace "200^b" with "400^b" and amend note b to read:

"^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.".

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)".

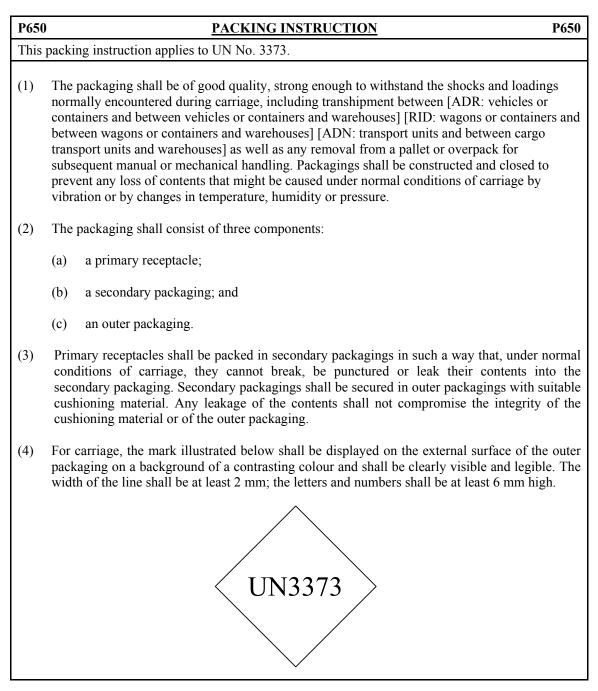
P620 In (a)(iii), insert "either" before "individually" and "or separated" after "wrapped" at the end.

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 in accordance with the requirements of P200. The primary receptacle and the secondary packaging shall maintain their integrity at the temperature of the liquid nitrogen.
- (d) Lyophilised substances may also be 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:



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P650		PACKING INSTRUCTION (cont'd)	P650				
(5)		completed package shall be capable of successfully passing the drop test in cified in 6.3.2.3 and 6.3.2.4 except that the height of the drop shall not be less the					
(6)	For	r liquid substances:					
	(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)	(d) Absorbent material shall be placed between the primary receptacle(s) and the second packaging. The absorbent material shall be in quantity sufficient to absorb the er contents of the primary receptacle(s) so that any release of the liquid substance will compromise the integrity of the cushioning material or of the outer packaging;					
	(e)	The primary receptacle or the secondary packaging shall be capable of w without leakage, an internal pressure of 95 kPa (0.95 bar) .	ithstanding,				
(7)	For	solid substances:					
	(a)	The primary receptacle(s) shall be siftproof;					
	(b)	The secondary packaging shall be siftproof;					
	(c)	c) If multiple fragile primary receptacles are placed in a single secondary packaging, shall be either individually wrapped or separated to prevent contact between them.					
(8)	Refi	rigerated or frozen specimens: Ice, dry ice and liquid nitrogen:					
	(a)	When dry ice or liquid nitrogen is used to keep specimens cold, all requirements of RID/ADR/ADN shall be met. When used, ice or dry ice sha outside the secondary packagings or in the outer packaging or an overpa supports shall be provided to secure the secondary packagings in the origin after the ice or dry ice has dissipated. If ice is used, the outside packaging shall be leakproof. If carbon dioxide, solid (dry ice) is used, the packaging designed and constructed to permit the release of carbon dioxide gas to prevup of pressure that could rupture the packagings and shall be marked "Carbondia" or "Dry ice".	Il be placed ick. Interior nal position or overpack ng shall be ent a build-				
	(b)	The primary receptacle and the secondary packaging shall maintain their interest temperature of the refrigerant used as well as the temperatures and the prest could result if refrigeration were lost.					
(9)		ctious substances assigned to UN No. 3373 which are packed and marked in this packing instruction are not subject to any other requirement in RID/ADR/A					
(10)	man pack	lear instructions on filling and closing such packages shall be provided by packaging anufacturers and subsequent distributors to the consignor or to the person who prepares the ickage (e.g. patient) to enable the package to be correctly prepared for carriage. any substance have leaked and have been spilled in a wagon/vehicle or container, it may not					
	be 1 deco	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					

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 p	acking	; instru	action applies to UN No. 3245.			
The fo	ollowin	ıg pacl	kagings are authorized provided the general provisions of 4.1.1 and 4.1.3 are met:			
(1)	Packagings according to P001 or P002 conforming to the packing group III performance level.					
(2)	Packagings, which need not conform to the packaging test requirements of Part 6, but conforming to the following:					
	(a)	An i	nner packaging comprising:			
		(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)		outer packaging shall be strong enough for its capacity, mass and intended use and with allest external dimension of at least 100 mm.			
			Additional requirement			
Dry ic	e and l	liquid	nitrogen			
constr	ucted t	o perr	ide, solid, (dry ice) is used as a refrigerant, the packaging shall be designed and nit the release of the gaseous carbon dioxide to prevent the build up of pressure that packaging.			

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.

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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** *NOTE:* For UN Nos 1748, 2208 and 2880, carriage by sea in IBCs is prohibited according to the IMDG Code.".

UN No.	Organic peroxide	Type of IBC	Maximum quantity (litres)	Control temper- ature	Emer- gency temper- ature
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 No formulation listed				

IBC520 Insert the following new entries:

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

- 4.1.4.4 **PR1** In the "UN Nos" column delete the following Nos: "3049", "3050", "3203" and "3207".
- 4.1.6.2 Add [before the text in brackets]: "The change of service for compressed and liquefied gases shall be in accordance with ISO 11621:1997".

[Delete "(see also table of standards at the end of this section)".]

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

Delete subparagraph d) and rename subsequent subparagraphs accordingly.

Add at the end: "For receptacles with valves described in (b) and (c), the requirements of ISO 11117:1998 shall be met; for valves with inherent protection, the requirements of Annex B of ISO 10297:1999 shall be met."

- 4.1.6.8 (b) Replace "and" with "or" at the end.
- 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).
- 4.1.6.10 [Delete the reference to EN 1795:1997 for compliance with 4.1.6.2]

- 4.1.7.2.1 Amend to read: "The currently assigned organic peroxides specifically listed in packing instruction IBC520 may be 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 carried are unknown, but suspected of meeting the criteria for inclusion in category A and assignment to UN Nos 2814 or 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.".

- 4.1.8.5 Replace "UN No. 3373 Diagnostic specimens" with: "UN No. 3373 Diagnostic or clinical specimens".
- 4.1.9.1.4 Replace "and intermediate bulk containers" with "intermediate bulk containers and [RID: wagons] [ADR: vehicles] [ADN: conveyances].".
- 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,"
- 4.1.10.4 **MP5** Replace "UN No. 3373 Diagnostic specimens" with: "UN No. 3373 Diagnostic or clinical specimens".

Chapter 4.2

- 4.2.1 Insert "Class 1 and" before "Classes 3 to 9".
- 4.2.1.1 At the end of the first sentence insert "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 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 carriage of solid substances carried above their melting point

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

- **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 meters or less; "Bare" means tanks having a shell with a diameter of more than 1.5 meters 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 meters with sun shield (see 6.7.3.2.12); "Insulated" means tanks having a shell with a diameter of more than 1.5 meters 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 "Pressurerelief requirements", and a footnote to read as follows:

"^b 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	quefied Max. allowable working pressure (bar) Small; Bare; Sunshield; Insulated		Pressure- relief requirements (see 6.7.3.7)	Maximum filling ratio	
1010	Butadienes or 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 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:
 - (a) 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;
 - (b) The suitability for 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).
 - (c) 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 carried as a solid mass. For solids which are 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.".

Chapter 4.3

[4.3.3.2.5 For UN No. 1010, add a new entry to read: "Other butadienes and hydrocarbon mixtures, stabilized, 2F, see 4.3.3.2.2 or 4.3.3.2.3.".]

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- 4.3.4.1.2 In the table, for the tank code L4BH, Class 6.2 delete "risk group 2" in column "Classification code".
- 4.3.4.1.3 c) Add ", liquid" at the end of the description of UN Nos 1389, 1392, 1420 and 1422: Add at the end of the paragraph:
 "UN No. 3401 alkali metal amalgam, solid, UN No. 3402 alkaline earth metal amalgam, solid, 3403 potassium metal alloys, solid and UN No. 3404 potassium sodium alloys, solid: code L10BN.".
