

OTIF



**ORGANISATION INTERGOUVERNEMENTALE POUR
LES TRANSPORTS INTERNATIONAUX FERROVIAIRES**

**ZWISCHENSTAATLICHE ORGANISATION FÜR DEN
INTERNATIONALEN EISENBAHNVERKEHR**

**INTERGOVERNMENTAL ORGANISATION FOR INTER-
NATIONAL CARRIAGE BY RAIL**

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**RID: 13th Session of the Working Group on Tank and Vehicle Technology
(Rome, 11 and 12 April 2012)**

**Subject: Report of the informal working group on carriage in bulk, 6-7th February 2012 –
proposed text for Chapter 7.3 of RID**

Discussion paper transmitted by the United Kingdom on behalf of the Working Group

1. The report of the informal working group on carriage in bulk 6/7 February 2012, was presented to the Joint Meeting of the RID Committee of Experts and the Working Party on the Transport of Dangerous Goods 19-23 March 2012, by the United Kingdom on behalf of the Working Group as INF.17. INF.43 and INF.44 were also presented to indicate how the proposed new assignment and additional provisions were derived and how these were to be allocated to all the substances involved.
2. As discussed at this Joint Meeting, the United Kingdom agreed to submit a proposed text for Chapter 7.3 of RID to the Working Group on Tank and Vehicle Technology for comment as the Annex to INF.17 only dealt with the equivalent text of ADR.
3. This text is presented in the Annex to this paper.
4. It is proposed to simply refer to closed wagons and not additionally to moveable roof wagons as the definition of the former in 1.2.1 includes wagons with a moveable roof. As reflected in the discussions at the Joint Meeting, the question arose as to whether the requirement of carriage as a wagon load or a full load (AP7) should apply to rail transport when it applied to road transport.

Aus Kostengründen wurde dieses Dokument nur in begrenzter Auflage gedruckt. Die Delegierten werden daher gebeten, die ihnen zugesandten Exemplare zu den Sitzungen mitzubringen. Die OTIF verfügt nur über eine sehr geringe Reserve.

5. The Working Group is invited to comment on these proposals prior to the United Kingdom submitting a formal proposal to the next session of the Joint Meeting.

Annex

Proposed Text for Chapter 7.3 of RID

Explanation

When text is presented within [] in 7.3.3 this is to indicate that the Joint Meeting needs to make a decision on whether the specific UN numbers should be referenced in the text of 7.3.3 or if the relevant Additional Provision (AP) should be assigned to the specific UN numbers in column 17 of Table A instead.

New text is underlined, deleted text ~~strikethrough~~

Chapter 7.3 Provisions concerning carriage in bulk

7.3.1 General provisions

7.3.1.1 Goods may not be carried in bulk in bulk containers, containers or wagons unless:

- (a) either a special provision, identified by the code "BK" or a reference to a specific paragraph, explicitly authorizing this mode of carriage is indicated in column (10) of Table A of Chapter 3.2 and the relevant conditions of 7.3.2 are satisfied in addition to those of this section; or
- (b) a special provision, identified by the code "VW" or a reference to a specific paragraph, explicitly authorizing this mode of carriage is indicated in column (17) of Table A of Chapter 3.2 and the conditions of this special provision, as laid down in 7.3.3 are satisfied in addition to those of this section.

Nevertheless, empty packagings, uncleaned, may be carried in bulk if this mode of carriage is not explicitly prohibited by other provisions of RID.

Unless otherwise provided in the special provisions in 7.3.3, the receptacle requirements for packages shall apply to small containers intended for the carriage of substances in bulk.

NOTE: For carriage in tanks, see Chapters 4.2 and 4.3.

7.3.1.2 Substances which may become liquid at temperatures likely to be encountered during carriage, are not permitted for carriage in bulk.

7.3.1.3 Bulk containers, containers or bodies of wagons shall be siftproof and shall be so closed that none of the contents can escape under normal conditions of carriage including the effect of vibration, or by changes of temperature, humidity or pressure.

7.3.1.4 ~~Bulk solids~~ Substances shall be loaded and evenly distributed in a manner that minimises movement that could result in damage to the bulk container, container or wagon or leakage of the dangerous goods.

7.3.1.5 Where venting devices are fitted they shall be kept clear and operable.

7.3.1.6 ~~Bulk solids~~ Substances shall not react dangerously with the material of the bulk container, container, wagon, gaskets, equipment including lids and tarpaulins and with protective coatings which are in contact with the contents or significantly weaken them. Bulk containers, containers or wagons shall be so constructed or adapted that the goods cannot penetrate between wooden floor coverings or come into contact with those parts of the bulk container, container or wagon that may be affected by the materials or residues thereof.

7.3.1.7 Before being filled and handed over for carriage, each bulk container, container or wagon shall be inspected and cleaned to ensure that it does not contain any residue on the interior or exterior of the bulk container, container or wagon that could:

- cause a dangerous reaction with the substance intended for carriage;
- detrimentally affect the structural integrity of the bulk container, container or wagon; or
- affect the dangerous goods retention capabilities of the bulk container, container or wagon.

7.3.1.8 During carriage, no dangerous residues shall adhere to the outer surfaces of bulk containers, containers or of the bodies of wagons.

7.3.1.9 If several closure systems are fitted in series, the system which is located nearest to the substance to be carried shall be closed first before filling.

- 7.3.1.10** Empty bulk containers, containers or wagons which have carried a dangerous solid substance in bulk shall be treated in the same manner as is required by RID for a filled bulk container, container or wagon, unless adequate measures have been taken to nullify any hazard.
- 7.3.1.11** If bulk containers, containers or wagons are used for the carriage in bulk of goods liable to cause a dust explosion, or evolve flammable vapours (e.g. for certain wastes) measures shall be taken to exclude sources of ignition and prevent dangerous electrostatic discharge during carriage, filling or discharge of the substance.
- 7.3.1.12** Substances, for example wastes, which may react dangerously with one another and substances of different classes and goods not subject to RID, which are liable to react dangerously with one another shall not be mixed together in the same bulk container, container or wagon. Dangerous reactions are:
- (a) combustion and/or evolution of considerable heat;
 - (b) emission of flammable and/or toxic gases;
 - (c) formation of corrosive liquids; or
 - (d) formation of unstable substances.
- 7.3.1.13** Before a bulk container, container or wagon is filled it shall be visually examined to ensure it is structurally serviceable, its interior walls, ceiling and floors are free from protrusions or damage and that any inner liners or substance retaining equipment are free from rips, tears or any damage that would compromise its cargo retention capabilities. Structurally serviceable, where relevant to the means of transport concerned, means the bulk container, container or wagon does not have major defects in its structural components, such as top and bottom side rails, top and bottom end rails, door sill and header, floor cross members, corner posts, and corner fittings of a bulk container or container. Major defects, where relevant to the means of transport concerned, include:
- (a) bends, cracks or breaks in the structural or supporting members that affect the integrity of the bulk container, container or of the body of the wagon;
 - (b) more than one splice or an improper splice (such as a lapped splice) in top or bottom end rails or door headers;
 - (c) more than two splices in any one top or bottom side rail;
 - (d) any splice in a door sill or corner post;
 - (e) door hinges and hardware that are seized, twisted, broken, missing, or otherwise inoperative;
 - (f) gaskets and seals that do not seal;
 - (g) any distortion of the overall configuration of a bulk container or container great enough to prevent proper alignment of handling equipment, mounting and securing on a chassis or wagon or vehicle, or insertion into ships' cells;
 - (h) any damage to lifting attachments or handling equipment interface features; or
 - (i) any damage to service or operational equipment.
- 7.3.2 Additional provisions for the carriage in bulk when the provisions of 7.3.1.1 (a) are applied**
- 7.3.2.1** The codes "BK1" and "BK2" in column (10) of Table A of Chapter 3.2 have the following meanings:
- BK1: Carriage in bulk in sheeted bulk containers is permitted;
- BK2: Carriage in bulk in closed bulk containers is permitted.
- 7.3.2.2** The bulk container used shall conform to the requirements of Chapter 6.11.
- 7.3.2.3 Goods of Class 4.2**
- The total mass carried in a bulk container shall be such that its spontaneous ignition temperature is greater than 55°C.
- 7.3.2.4 Goods of Class 4.3**
- These goods shall be carried in bulk containers (code BK2) which are waterproof.
- 7.3.2.5 Goods of Class 5.1**
- Bulk containers shall be so constructed or adapted that the goods cannot come into contact with wood or any other incompatible material.
- 7.3.2.6 Goods of Class 6.2**
- 7.3.2.6.1 Animal material of Class 6.2**

Animal material containing infectious substances (UN Nos. 2814, 2900 and 3373) is authorized for carriage in bulk containers provided the following conditions are met:

- (a) Sheeted bulk containers BK1 are permitted provided that they are not filled to maximum capacity to avoid substances coming into contact with the sheeting. Closed bulk containers BK2 are also permitted;
- (b) Closed and sheeted bulk containers, and their openings, shall be leak-proof by design or by the fitting of a suitable liner;
- (c) The animal material shall be thoroughly treated with an appropriate disinfectant before loading prior to carriage;
- (d) Sheeted bulk containers shall be covered by an additional top liner weighted down by absorbent material treated with an appropriate disinfectant;
- (e) Closed or sheeted bulk containers shall not be re-used until after they have been thoroughly cleaned and disinfected.

NOTE: Additional provisions may be required by appropriate national health authorities.

7.3.2.6.2 Wastes of Class 6.2 (UN 3291)

- (a) (Reserved);
- (b) Closed bulk containers and their openings shall be leakproof by design. These bulk containers shall have non porous interior surfaces and shall be free from cracks or other features which could damage packagings inside, impede disinfection or permit inadvertent release;
- (c) Wastes of UN No. 3291 shall be contained within the closed bulk container in UN type tested and approved sealed leakproof plastics bags tested for solids of packing group II and marked in accordance with 6.1.3.1. Such plastics bags shall be capable of passing the tests for tear and impact resistance according to ISO 7765-1:1988 "Plastics film and sheeting – Determination of impact resistance by the free-falling dart method – Part 1: Staircase methods" and ISO 6383-2:1983 "Plastics – Film and sheeting – Determination of tear resistance – Part 2: Elmendorf method". Each bag shall have an impact resistance of at least 165 g and a tear resistance of at least 480 g in both parallel and perpendicular planes with respect to the length of the bag. The maximum net mass of each plastics bag shall be 30 kg;
- (d) Single articles exceeding 30 kg such as soiled mattresses may be carried without the need for a plastics bag when authorized by the competent authority;
- (e) Wastes of UN No. 3291 which contain liquids shall only be carried in plastics bags containing sufficient absorbent material to absorb the entire amount of liquid without it spilling in the bulk container;
- (f) Wastes of UN No. 3291 containing sharp objects shall only be carried in UN type tested and approved rigid packagings meeting the provisions of packing instructions P621, IBC620 or LP621;
- (g) Rigid packagings specified in packing instructions P621, IBC620 or LP621 may also be used. They shall be properly secured to prevent damage during normal conditions of carriage. Wastes carried in rigid packagings and plastics bags together in the same closed bulk container shall be adequately segregated from each other, e.g. by suitable rigid barriers or dividers, mesh nets or otherwise securing, such that they prevent damage to the packagings during normal conditions of carriage;
- (h) Wastes of UN No. 3291 in plastics bags shall not be compressed in a closed bulk container in such a way that bags may be rendered no longer leakproof;
- (i) The closed bulk container shall be inspected for leakage or spillage after each journey. If any wastes of UN No. 3291 have leaked or been spilled in the closed bulk container, it shall not be re-used until after it has been thoroughly cleaned and, if necessary, disinfected or decontaminated with an appropriate agent. No other goods shall be carried together with UN No. 3291 other than medical or veterinary wastes. Any such other wastes carried in the same closed bulk container shall be inspected for possible contamination.

7.3.2.7 Material of Class 7

For the carriage of unpackaged radioactive material, see 4.1.9.2.3.

7.3.2.8 Goods of Class 8

These goods shall be carried in bulk containers which are watertight.

7.3.3 ~~Special~~ Additional provisions for carriage in bulk when the provisions of 7.3.1.1 (b) are applied

7.3.3.1 ~~The codes VW1, VW2 and VW13 in column (17) of Table A of Chapter 3.2 have the following meanings: When an alphanumeric code beginning with "VW" is shown under an entry in column (17) of Table A of Chapter 3.2, the following special provisions apply:~~

VW 1 Carriage in bulk in ~~closed wagons, movable roof wagons, sheeted wagons, closed containers or in sheeted large containers or sheeted bulk containers~~ is permitted.

- ~~VW 2~~ Carriage in bulk is permitted in movable-roof closed wagons with a metal body, closed large metal containers and in wagons or large containers with a metal body covered with a non-combustible sheet closed bulk containers is permitted.
- ~~VW 13~~ Carriage in bulk is permitted in specially equipped wagons or large containers in accordance with standards specified by the competent authority of the country of origin. If the country of origin is not an RID Contracting State, the conditions laid down shall be recognized by the competent authority of the first RID Contracting State reached by the consignment.
- ~~VW 3~~ Carriage in bulk is permitted in sheeted wagons or sheeted large containers with adequate ventilation or in movable-roof wagons. Suitable measures shall be taken to ensure that none of the contents, particularly any liquid components, can escape.
- ~~VW 4~~ Carriage in bulk is permitted in sheeted metal wagons, movable-roof metal wagons, closed metal containers or in sheeted large metal containers. For UN Nos. 2008, 2009, 2210, 2545, 2546, 2881, 3189 and 3190, only carriage in bulk of solid waste is permitted.
- ~~VW 5~~ Carriage in bulk is permitted in specially equipped wagons and containers. The receptacles of specially equipped wagons and containers and their closures shall conform to the general packing conditions of 4.1.1.1, 4.1.1.2 and 4.1.1.8. Openings designed for loading and unloading shall be capable of being hermetically closed.
- ~~VW 6~~ Carriage in bulk is permitted in movable-roof wagons or in closed large containers.
- ~~VW 7~~ Carriage in bulk in closed wagons, sheeted wagons, movable-roof wagons, closed containers or in sheeted large containers is permitted only if the substance is in pieces.
- ~~VW 8~~ Carriage in bulk is permitted in open wagons or containers covered with an impermeable and non-combustible sheet, or in movable-roof wagons or in closed containers.
- ~~Wagons and containers shall be so constructed either that the substances contained cannot come into contact with wood or any other combustible material, or that the entire surface of the floor and walls, if made of wood or another combustible material has been provided with an impermeable surfacing resistant to combustion or has been coated with sodium silicate or a similar substance.~~
- ~~VW 9~~ Carriage in bulk is permitted in sheeted wagons or in sheeted large containers, movable-roof wagons or in closed containers.
- ~~For substances of Class 8, wagons and containers shall be equipped with a suitable and sufficiently stout inner lining.~~
- ~~VW 10~~ Carriage in bulk is permitted in sheeted wagons, sheeted large containers, movable-roof wagons or in closed containers. Wagons and containers shall be leakproof or rendered leakproof, for example by means of a suitable, sufficiently stout inner lining.
- ~~VW 11~~ Carriage in bulk is permitted in specially equipped wagons and containers. The receptacles of specially equipped wagons and containers shall be so constructed that the openings designed for loading and unloading can be closed hermetically. Substances shall be filled in the receptacles in a manner which avoids risks to humans, animals and the environment.
- ~~VW 12~~ Substances for which carriage in tank-wagons, in portable tanks or in tank-containers is unsuitable because of the high temperature and density of the substance may be carried in special wagons or containers in accordance with standards specified by the competent authority of the country of origin. If the country of origin is not an RID Contracting State, the conditions laid down shall be recognized by the competent authority of the first RID Contracting State reached by the consignment.
- ~~VW 14~~ (1) Used batteries may be carried in bulk in specially equipped wagons or containers. Large plastics containers shall not be permitted. Small plastics containers shall be capable of withstanding, when fully loaded, a drop from a height of 0.8 m onto a hard surface at -18 °C, without breakage.
- (2) The load compartments of wagons or containers shall be of steel resistant to the corrosive substances contained in the batteries. Less resistant steels may be used when there is a sufficiently great wall thickness or a plastics lining/layer resistant to the corrosive substances. The design of the load compartments of wagons or containers shall take account of any residual currents and impact from the batteries.
- NOTE:** Steel exhibiting a maximum rate of progressive reduction of 0.1 mm per year under the effects of the corrosive substances may be considered as resistant.

- ~~(3) It shall be ensured by means of constructional measures that there will be no leakage of corrosive substances from the load compartments of wagons or containers during carriage. Open load compartments shall be covered. The cover shall be resistant to the corrosive substances.~~
- ~~(4) Before loading, the load compartments of wagons or containers, including their equipment, shall be inspected for damage. Wagons or containers with damaged load compartments shall not be loaded. The load compartments of wagons or containers shall not be loaded above the top of their walls.~~
- ~~(5) No batteries containing different substances and no other goods liable to react dangerously with each other shall be present in the load compartments of wagons or containers (see "dangerous reaction" in 4.2.1). During carriage no dangerous residue of the corrosive substances contained in the batteries shall adhere to the outer surface of the load compartments of wagons or containers.~~

~~— **VW 15** Carriage in bulk is permitted in closed wagons, movable roof wagons, sheeted wagons, closed containers or sheeted large containers for substances or mixtures (such as preparations or wastes) containing not more than 1000 mg/kg of substance to which this UN No is assigned.~~

~~The wagons or containers shall be leakproof or rendered leakproof, for example by means of a suitable and sufficiently stout inner lining.~~

~~— **VW 16** Carriage in bulk is permitted in accordance with the provisions of 4.1.9.2.3.~~

~~**VW 17** Carriage in bulk of SCO-I is permitted in accordance with the provisions of 4.1.9.2.3.~~

7.3.3.2 When the VW bulk codes are used the following additional provisions shall apply:

7.3.3.2.1 Goods of Class 4.1

AP1 [For UN1334] wagons and containers shall have a metal body and where fitted the sheet shall be non-combustible.

AP2 [For UN3175] closed wagons and closed containers shall have adequate ventilation.

7.3.3.2.2 Goods of Class 4.2

AP1 Wagons and containers shall have a metal body and where fitted the sheet shall be non-combustible.

7.3.3.2.3 Goods of Class 4.3

AP3 [For UN 1405 and UN 2844 sheeted wagons and sheeted containers shall be used only when the substance is in pieces (not in powder, granular, dust or ashes form).]

(Comment from the working group - We are not certain it is necessary to introduce this as a general requirement for all substances in Class 4.3.)

AP4 Closed wagons and closed containers shall be equipped with hermetically closed openings used for loading and unloading to prevent the exit of gas and exclude the ingress of moisture.

AP5 The cargo doors of the closed wagons or closed containers shall be marked with the following in letters not less than 25 mm high:

"WARNING

NO VENTILATION

OPEN WITH CAUTION"

This shall be in a language considered appropriate by the consignor.

7.3.3.2.4 Goods of Class 5.1

AP6 If the wagon or container is made of wood or other combustible material an impermeable surfacing resistant to combustion or a coating of sodium silicate or similar substance shall be provided. Sheeting shall also be impermeable and non-combustible.

[AP7 Carriage shall only be as a wagon load or a full load.]

7.3.3.2.5 Goods of Class 6.1

[AP7 Carriage shall only be as a wagon load or a full load.]

7.3.3.2.6 **Goods of Class 8**

[AP7 [Except for UN 2794, UN 2795, UN 2800, UN 3028] carriage shall only be as a wagon load or a full load.]

AP8 [For UN 2794, UN 2795, UN 2800, UN 3028] the design of the load compartment of wagons or containers shall take account of any residual currents and impacts from the batteries.

The load compartments of wagons or containers shall be of steel resistant to the corrosive substances contained in the batteries. Less resistant steels may be used when there is a sufficiently great wall thickness or a plastics lining/layer resistant to the corrosive substances. The load compartments of wagons or containers shall not be loaded above the top of their walls.

Carriage is also permitted in small plastics containers which shall be capable of withstanding, when fully loaded, a drop from a height of 0.8m on to a hard surface at -18°C, without breakage.

7.3.3.2.7 **Goods of Class 9**

AP2 [For UN 2211 and UN 3314] closed wagons and closed containers shall have adequate ventilation.

AP9 [For UN 2315, UN 3151, UN 3152, UN 3432] carriage is permitted for solids (substances or mixtures, such as preparations or wastes) containing on average not more than 1000 mg/kg of substance to which this UN number is assigned. At no point of the load shall the concentration of this substance or these substances be higher than 10000 mg/kg.

Consequential Amendments

Chapter 1.2

1.2.1 Amend definition of 'Carriage in bulk' to read as follows:

“ *“Carriage in bulk”* means the carriage of unpackaged solids or articles in wagons, containers or bulk containers. The term does not apply to packaged goods nor to substances carried in tanks;”

Chapter 3.2

Amend the explanation for column 17, Table A, as follows:

“Contains the alphanumeric code(s), starting with letters “VW” [or “AP”], of the applicable special provisions for carriage in bulk. These are listed in 7.3.3. If no code or a reference to a specific paragraph is given, carriage in bulk is not permitted. General and additional provisions concerning the carriage in bulk are to be found in Chapters 7.1 and 7.3.”

For UN 2912:

Delete 'VW16' in column 17 and add 'see 4.1.9.2.3' to columns 10 and 17.

For UN 2913:

Delete 'VW17' in column 17 and add 'see 4.1.9.2.3' to columns 10 and 17.

For all UN numbers having an existing VW code:

Amend the references to VW codes in column 17, Table A, in accordance with this Annex.