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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 13 to 24 March 2000

**Addendum 6**

**Chapter 5.3 of the draft restructured ADR**

**PLACARDING AND MARKING OF CONTAINERS, MEGCs, TANK-CONTAINERS,  
PORTABLE TANKS AND VEHICLES**

**Text adopted by the Joint Meeting**

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## CHAPTER 5.3

### PLACARDING AND MARKING OF CONTAINERS, MEGCs, TANK-CONTAINERS, PORTABLE TANKS AND VEHICLES

**NOTE :** *For marking and placarding of containers, MEGCs, tank-containers and portable tanks for carriage in a transport chain including a maritime journey, see also 1.1.4.2. If the provisions of 1.1.4.2. (c) are applied, only paragraphs 5.3.1.3 and 5.3.2.1.1 of this Chapter are applicable.*

#### 5.3.1 Placarding

##### 5.3.1.1 General provisions

5.3.1.1.1 As and when required in this section, placards shall be affixed to the exterior surface of containers, MEGCs, tank-containers, portable tanks and vehicles. Placards shall correspond to the labels required in column (5) and, where appropriate, column (6) of Table A of Chapter 3.2 for the dangerous goods contained in the container, MEGC, tank-container, portable tank or vehicle and shall conform to the specifications given in 5.3.1.7.

5.3.1.1.2 For Class 1, compatibility groups shall not be indicated on placards if the transport unit or container is carrying substances or articles belonging to two or more compatibility groups. Transport units or containers carrying substances or articles of different divisions shall bear only placards conforming to the model of the most dangerous division in the order:

1.1 (most dangerous), 1.5, 1.2, 1.3, 1.6, 1.4 (least dangerous).

When 1.5 D substances are carried with substances or articles of Division 1.2, the transport unit or container shall be placarded as Division 1.1.

5.3.1.1.3. For Class 7, the primary risk placard shall conform to model No.7D as specified in 5.3.1.7.2. This placard is not required for vehicles or containers carrying excepted packages and for small containers.

Where both class 7 labels and placards would be required to be affixed to vehicles, containers, MEGCs, tank-containers or portable tanks, an enlarged label corresponding to the label required may be displayed instead of placard No.7D to serve both purposes.

5.3.1.1.4 Containers, MEGCs, tank-containers, portable tanks or vehicles containing goods of more than one class need not bear a subsidiary risk placard if the hazard represented by that placard is already indicated by a primary or subsidiary risk placard.

5.3.1.1.5 Placards which do not relate to the dangerous goods being carried, or residues thereof, shall be removed or covered.

**5.3.1.2 *Placarding of containers, MEGCs, tank-containers and portable tanks***

*[NOTE: This sub-section does not apply to swap-bodies, except tank swap bodies.]*

The placards shall be affixed to both sides and at each end of the container, MEGC, tank-container or portable tank.

**5.3.1.3 *Placarding of vehicles carrying containers, MEGCs, tank-containers or portable tanks***

*[NOTE: This sub-section does not apply to the placarding of vehicles carrying swap-bodies other than tank swap-bodies; for such vehicles, see 5.3.1.5]*

If the placards affixed to the containers or tank-containers are not visible from outside the carrying vehicles, the same placards shall also be affixed to both sides and at the rear of the vehicle. Otherwise, no placard need be affixed on the carrying vehicle.

**5.3.1.4 *Placarding of vehicles for carriage in bulk, tank-vehicles, battery vehicles and vehicles with demountable tanks***

Placards shall be affixed to both sides and at the rear of the vehicle.

*[NOTE: When, in the course of an ADR journey or at the end of an ADR journey, a tank semi-trailer is separated from its tractor to be loaded on board a ship or an inland navigation vessel, placards shall also be displayed at the front of the semi-trailer.]*

**5.3.1.5 *Placarding of vehicles carrying packages only***

*[NOTE: This sub-section applies also to vehicles carrying swap-bodies loaded with packages]*

5.3.1.5.1 For transport units carrying packages containing substances or articles of Class 1, placards shall be affixed to both sides and at the rear of the transport unit.

5.3.1.5.2 For vehicles carrying radioactive material of Class 7 in packagings or IBCs (other than excepted packages), placards shall be affixed to both sides and at the rear of the vehicle.

*[NOTE: If, during an ADR journey, a vehicle carrying packages containing dangerous goods of classes other than Classes 1 and 7 is loaded on board a ship for sea transport or if the ADR journey precedes a voyage by sea, placards shall be affixed to both sides and at the rear of the vehicle. Placards may remain affixed to both sides and at the rear of the vehicle after a sea voyage.]*

**5.3.1.6 *Placarding of empty, tank-vehicles, battery vehicles, tank-containers, MEGCs and portable tanks***

5.3.1.6.1 Empty tank-vehicles, vehicles with demountable tanks, battery-vehicles, tank-containers, MEGCs and portable tanks uncleaned and not degassed, and empty vehicles and containers for carriage in bulk, uncleaned, shall continue to display the placards required for the previous load.

**5.3.1.7 *Specifications for placards***

5.3.1.7.1 Except as provided in 5.3.1.7.2 for the Class 7 placard, a placard shall:

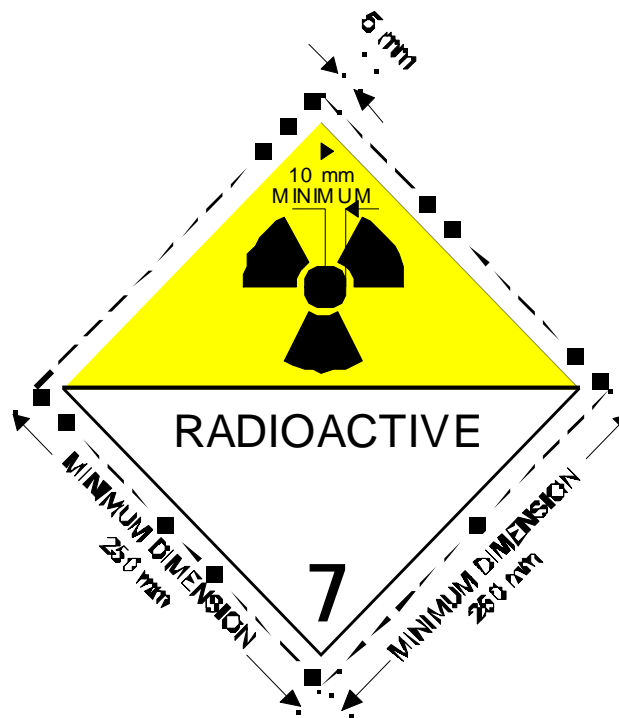
(a) Be not less than 250 mm by 250 mm, with a line of the same colour as the symbol running 12.5mm inside the edge and parallel with it;

(b) Correspond to the label required for the dangerous goods in question with respect to colour and symbol (see 5.2.2.2); and

(c) Display the numbers (and for goods of Class 1, the compatibility group letter) prescribed for the dangerous goods in question in 5.2.2.2 for the corresponding label, in digits not less than 25 mm high.

5.3.1.7.2 The Class 7 placard shall be not less than 250 mm by 250 mm with a black line running 5 mm inside the edge and parallel with it and is otherwise as shown below. (Model No. 7D). The number "7" shall not be less than 25 mm high. The background colour of the upper half of the placard shall be yellow and of the lower half white, the colour of the trefoil and the printing shall be black. The use of the word "RADIOACTIVE" in the bottom half is optional to allow the use of this placard to display the appropriate United Nations number for the consignment.

## Placard for radioactive material of Class 7



(No.7D)

Symbol (trefoil): black; Background: upper half yellow with white border, lower half white;

The lower half shall show the word RADIOACTIVE or alternatively, when required, the appropriate UN Number (see 5.3.2.1.2) and the figure '7' in the bottom corner.

5.3.1.7.3 For tanks with a capacity of not more than 3 m<sup>3</sup> and for small containers, placards may be replaced by labels conforming to 5.2.2.2.

## 5.3.2 Orange-coloured plate marking

### 5.3.2.1 *General orange-coloured plate marking provisions*

5.3.2.1.1 Transport units carrying dangerous goods shall display two rectangular reflectorized orange-coloured plates conforming to 5.3.2.2.1, set in a vertical plane. They shall be affixed one at the front and the other at the rear of the transport unit, both perpendicular to the longitudinal axis of the transport unit. They shall be clearly visible.

- 5.3.2.1.2 When a hazard identification number is indicated in column (20) of table A of Chapter 3.2, tank-vehicles or transport units having one or more tanks carrying dangerous goods shall in addition display on the sides of each tank or tank compartment, clearly visible and parallel to the longitudinal axis of the vehicle, orange-coloured plates identical with those prescribed in 5.3.2.1.1. These orange-coloured plates shall bear the hazard identification number and the UN number prescribed respectively in columns (20) and (1) of table A of chapter 3.2 for each of the substances carried in the tank or in a compartment of the tank.
- 5.3.2.1.3 For tank-vehicles or transport units having one or more tanks carrying substances with UN Nos. 1202, 1203 or 1223, or aviation fuel classed under UN Nos. 1268 or 1863, but no other dangerous substance, the orange-coloured plates prescribed in 5.3.2.1.2 need not be affixed if the plates affixed to the front and rear in accordance with 5.3.2.1.1. bear the hazard identification number and the UN number prescribed for the most hazardous substance carried, i.e. the substance with the lowest flash-point.
- 5.3.2.1.4 When a hazard identification number is indicated in column (20) of Table A of chapter 3.2, transport units and containers carrying dangerous solid substances in bulk shall in addition display on the sides of each transport unit or container, clearly visible and parallel to the longitudinal axis of the vehicle, orange-coloured plates identical with those prescribed in 5.3.2.1.1. These orange-coloured plates shall bear the hazard identification number and the UN number prescribed respectively in columns (20) and (1) of table A of Chapter 3.2 for each of the substances carried in bulk in the transport unit or in the container.
- 5.3.2.1.5 For containers carrying dangerous solid substances in bulk and for tanks-containers, the plates prescribed in 5.3.2.2 and 5.3.2.3 may be replaced by a self-adhesive sheet, by paint or by any other equivalent process, provided the material used for this purpose is weather-resistant and ensures durable marking. In this case, the provisions of the last sentences of 5.3.2.2.2, concerning resistance to fire, shall not apply.
- 5.3.2.1.6 For transport units carrying only one substance, the orange-coloured plates prescribed in 5.3.2.1.2 and 5.3.2.1.3 shall not be necessary provided that those displayed at the front and rear in accordance with 5.3.2.1.1 bear the hazard identification number and the UN number prescribed respectively in columns (20) and (1) of Table A of Chapter 3.2
- 5.3.2.1.7 The above requirements are also applicable to empty fixed or demountable tanks, tank-containers and battery-vehicles, uncleaned and not degassed and empty vehicles and empty containers for carriage in bulk, uncleaned.

- 5.3.2.1.8 Orange-coloured plates which do not relate to dangerous goods carried, or residues thereof, shall be removed or covered. If plates are covered, the covering shall be total and remain effective after 15 minute' engulfment in fire.

**5.3.2.2 *Specifications for the orange-coloured plates***

- 5.3.2.2.1 The reflectorized orange-coloured plates shall be of 40 cm base and not less than 30 cm high; they shall have a black border not more than 15 mm wide. They shall be clearly visible. If the size and construction of the vehicle are such that the available surface area is insufficient to affix these orange-coloured plates, their dimensions may be reduced to 300 mm for the base, 120 mm for the height and 10 mm for the black border.

*NOTE: The colour of the orange plates in conditions of normal use should have chromaticity co-ordinates lying within the area on the chromaticity diagram formed by joining the following co-ordinates*

<i>Chromaticity co-ordinates of points at the corners of the area on the chromaticity diagram</i>				
<i>x</i>	0.52	0.52	0.578	0.618
<i>y</i>	0.38	0.40	0.422	0.38

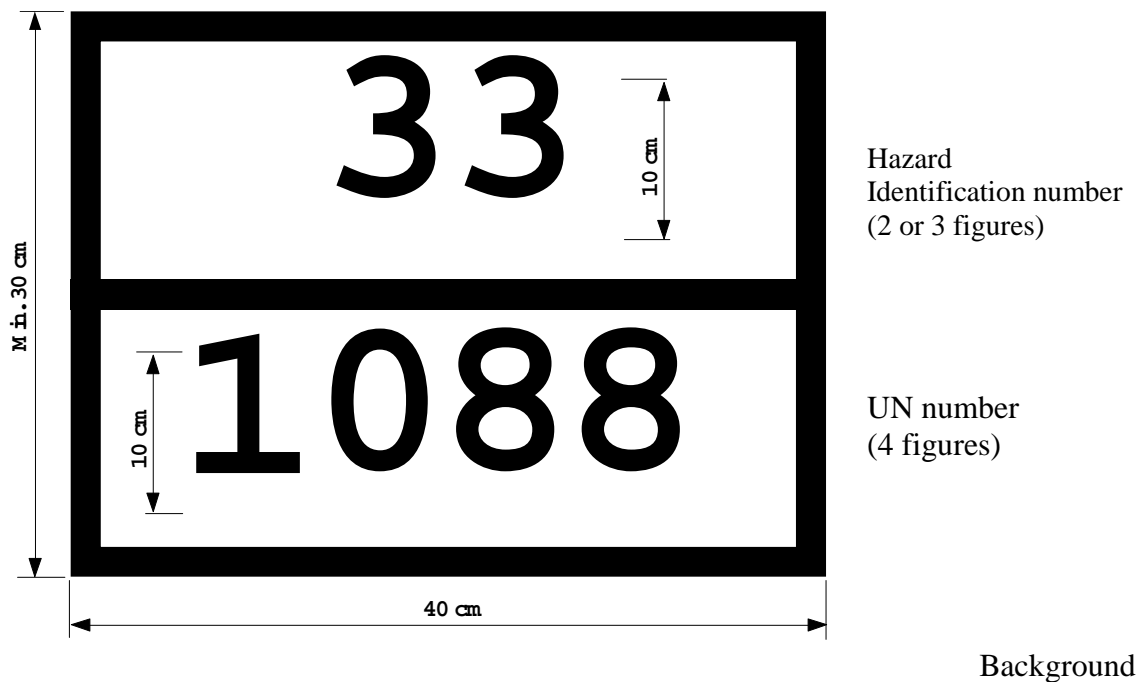
*Luminance factor of reflectorized colour:  $\beta > 0.12$ .*

*Reference centre E, standard illuminant C, normal incidence 45°, viewed at 0°.*

*Co-efficient of reflex luminous intensity at an angle of illumination of 5°, viewed at 0.2°: not less than 20 candelas per lux per m<sup>2</sup>.*

- 5.3.2.2.2 The hazard identification number and the UN number shall consist of black digits 100 mm high and of 15 mm stroke thickness. The UN number shall be inscribed in the lower part of the plate and the hazard-identification number in the upper part ; they shall be separated by a horizontal black line, 15 mm in stroke width, extending from side to side of the plate at mid-height (see 5.3.2.2.3). The hazard identification number and the UN number shall be indelible and shall remain legible after 15 minutes' engulfment in fire.

**5.3.2.2.3** *Example of orange-coloured plate with hazard identification number and UN number*



orange.

Border, horizontal line and figure black, 15 mm thickness.

**5.3.2.3** *Meaning of hazard identification numbers*

5.3.2.3.1 The hazard identification number consists of two or three figures. In general, the figures indicate the following hazards:

- |   |  |
|---|--|
| 2 | Emission of gas due to pressure or to chemical reaction            |
| 3 | Flammability of liquids (vapours) and gases or self-heating liquid |
| 4 | Flammability of solids or self-heating solid                       |



- 5 Oxidizing (fire-intensifying) effect
- 6 Toxicity or risk of infection
- 7 Radioactivity
- 8 Corrosivity
- 9 Risk of spontaneous violent reaction

*NOTE: The risk of spontaneous violent reaction within the meaning of figure 9 include the possibility following from the nature of a substance of a risk of explosion, disintegration and polymerization reaction following the release of considerable heat or flammable and/or toxic gases.*

Doubling of a figure indicates an intensification of that particular hazard.

Where the hazard associated with a substance can be adequately indicated by a single figure, this is followed by zero.

The following combinations of figures, however, have a special meaning: 22, 323, 333, 362, 382, 423, 44, 446, 462, 482, 539, 606, 623, 642, 823, 842 and 90, see 5.2.3.3.2 below.

If a hazard identification number is prefixed by the letter "X", this indicates that the substance will react dangerously with water. For such substances, water may only be used by approval of experts.

5.3.3.3.2 The hazard identification numbers listed in column (20) of table A of chapter 3.2 have the following meanings:

- 20 asphyxiant gas or gas with no subsidiary risk
- 22 refrigerated liquefied gas, asphyxiant
- 223 refrigerated liquefied gas, flammable
- 225 refrigerated liquefied gas, oxidizing (fire-intensifying)
- 23 flammable gas
- 239 flammable gas, which can spontaneously lead to violent reaction
- 25 oxidizing (fire-intensifying) gas
- 26 toxic gas
- 263 toxic gas, flammable
- 265 toxic gas, oxidizing (fire-intensifying)
- 268 toxic gas, corrosive
  
- 30 flammable liquid (flash-point between 23 °C and 61 °C, inclusive) or flammable liquid or solid in the molten state with a flash-point above 61 °C, heated to a temperature equal to or above its flash-point, or self-heating liquid

- 323 flammable liquid which reacts with water, emitting flammable gases  
X323 flammable liquid which reacts dangerously with water, emitting flammable gases 1/
- 33 highly flammable liquid (flash-point below 23 °C)  
333 pyrophoric liquid  
333 pyrophoric liquid which reacts dangerously with water 1/  
336 highly flammable liquid, toxic  
338 highly flammable liquid, corrosive  
X338 highly flammable liquid, corrosive, which reacts dangerously with water 1/
- 339 highly flammable liquid which can spontaneously lead to violent reaction
- 36 flammable liquid (flash-point between 23 °C and 61 °C inclusive), slightly toxic, or self-heating liquid, toxic
- 362 flammable liquid, toxic, which reacts with water, emitting flammable gases  
X362 flammable liquid toxic, which reacts dangerously with water, emitting flammable gases 1/
- 368 flammable liquid, toxic, corrosive  
38 flammable liquid (flash-point between 23 °C and 61 °C, inclusive), corrosive  
382 flammable liquid, corrosive, which reacts with water, emitting flammable gases  
X382 flammable liquid, corrosive, which reacts dangerously with water, emitting flammable gases 1/
- 39 flammable liquid, which can spontaneously lead to violent reaction
- 40 flammable solid, or self-reactive substance, or self-heating substance  
423 solid which reacts with water, emitting flammable gases  
X423 flammable solid which reacts dangerously with water, emitting flammable gases 1/
- 43 spontaneously flammable (pyrophoric) solid  
44 flammable solid, in the molten state at an elevated temperature  
446 flammable solid, toxic, in the molten state, at an elevated temperature  
46 flammable or self-heating solid, toxic  
462 toxic solid which reacts with water, emitting flammable gases  
X462 solid which, reacts dangerously with water, emitting toxic gases 1/  
48 flammable or self-heating solid, corrosive  
482 corrosive solid which reacts with water, emitting flammable gases 1/  
X482 solid which, reacts dangerously with water, emitting corrosive gases 1/

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<sup>1/</sup> *Water not to be used except by approval of experts.*

- 50 oxidizing (fire-intensifying) substance  
539 flammable organic peroxide  
55 strongly oxidizing (fire-intensifying) substance  
556 strongly oxidizing (fire-intensifying) substance, toxic  
558 strongly oxidizing (fire-intensifying) substance, corrosive  
559 strongly oxidizing (fire-intensifying) substance, which can spontaneously lead  
560 to violent reaction  
56 oxidizing substance (fire-intensifying), toxic  
568 oxidizing substance (fire-intensifying), toxic, corrosive  
58 oxidizing substance (fire-intensifying), corrosive  
59 oxidizing substance (fire-intensifying) which can spontaneously lead to violent reaction
- 60 toxic or slightly toxic substance  
606 infectious substance  
623 toxic liquid, which reacts with water, emitting flammable gases  
63 toxic substance, flammable (flash-point between 23 °C and 61 °C inclusive)  
638 toxic substance, flammable (flash-point between 23 °C and 61 °C inclusive), corrosive  
639 toxic substance, flammable (flash-point not above 61 °C) which can spontaneously lead to violent reaction  
64 toxic solid, flammable or self-heating  
642 toxic solid, which reacts with water, emitting flammable gases  
65 toxic substance, oxidizing (fire-intensifying)  
66 highly toxic substance  
663 highly toxic substance, flammable (flash-point not above 61 °C)  
664 highly toxic solid, flammable or self-heating  
665 highly toxic substance, oxidizing (fire-intensifying)  
668 highly toxic substance, corrosive  
669 highly toxic substance which can spontaneously lead to violent reaction  
68 toxic substance, corrosive  
69 toxic or slightly toxic substance, which can spontaneously lead to violent reaction
- 70 radioactive material  
72 radioactive gas  
723 radioactive gas, flammable  
73 radioactive liquid, flammable (flash-point not above 61 °C)

- 74 radioactive solid, flammable  
75 radioactive material, oxidizing (fire-intensifying)  
76 radioactive material, toxic  
78 radioactive material, corrosive
- 80 corrosive or slightly corrosive substance  
X80 corrosive or slightly corrosive substance, which reacts dangerously with water 1/
- 823 corrosive liquid which reacts with water, emitting flammable gases  
83 corrosive or slightly corrosive substance, flammable (flash-point between 23 °C and 61 °C inclusive)  
X83 corrosive or slightly corrosive substance, flammable, (flash-point between 23 °C and 61 °C inclusive), which reacts dangerously with water 1/
- 839 corrosive or slightly corrosive substance, flammable (flash-point between 23 °C and 61 °C inclusive) which can spontaneously lead to violent reaction 1/
- X839 corrosive or slightly corrosive substance, flammable (flash-point between 23 °C and 61 °C inclusive), which can spontaneously lead to violent reaction and which reacts dangerously with water 1/
- 84 corrosive solid, flammable or self-heating  
842 corrosive solid which reacts with water, emitting flammable gases  
85 corrosive or slightly corrosive substance, oxidizing (fire-intensifying)  
856 corrosive or slightly corrosive substance, oxidizing (fire-intensifying) and toxic
- 86 corrosive or slightly corrosive substance, toxic  
88 highly corrosive substance  
X88 highly corrosive substance, which reacts dangerously with water 1/  
883 highly corrosive substance, flammable (flash-point between 23 °C and 61 °C inclusive)  
884 highly corrosive solid, flammable or self-heating  
885 highly corrosive substance, oxidizing (fire-intensifying)  
886 highly corrosive substance, toxic  
X886 highly corrosive substance, toxic, which reacts dangerously with water 1/
- 89 corrosive or slightly corrosive substance, which can spontaneously lead to violent reaction  
90 environmentally hazardous substance; miscellaneous dangerous substances  
99 miscellaneous dangerous substance carried at an elevated temperature.

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1/ *Water not to be used except by approval of experts.*

**5.3.3 Mark for elevated temperature substances**

Tank-vehicles, tank-containers, special vehicles or especially equipped vehicles for which a mark for elevated temperature substances is required according to special provision 580 in column (6) of Table A of Chapter 3.2 shall bear on both sides and at the rear a triangular shaped mark with sides of at least 250 mm, to be shown in red, as reproduced below.

