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**INLAND TRANSPORT COMMITTEE**

Working Party on the Transport of Dangerous Goods

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Item 5 of the provisional agenda

**PROPOSALS FOR AMENDMENTS TO ANNEXES A AND B OF ADR**

Instructions in writing (5.4.3)

Transmitted by the European Chemical Industry Council (CEFIC) \*

Summary	
Executive summary:	A review of the contents of the “new” instructions in writing reveals a number of deficiencies: the characteristics of the hazards are not always complete and important information provided by marks and warning signs are missing.
Action to be taken:	Revision of 5.4.3.4 and 8.1.5.2
Related documents:	ECE/TRANS/WP.15/2009/3 (Sweden)

Introduction

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\* The present document is submitted in accordance with paragraph 1(c) of the terms of reference of the Working Party, as contained in document ECE/TRANS/WP.15/190/Add.1, which provides a mandate to “Develop and update the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR)”.

1. Now that the new instructions in writing have been in place for several months, CEFIC has collected a number of comments from its members concerning the contents of these instructions which are presented below. Also the comments made during the discussion of ECE/TRANS/WP.15/2009/3 at the last meeting have been taken into account

2. The text in column (2) does not always completely reflect the hazards, indicated by the danger labels and placards, shown in column (1):

- (a) For the class 3 and 4.1 hazards the description of the hazard characteristic of desensitized explosives is missing.
- (b) For the class 4.1 and 5.2 hazards the description that the exothermic decomposition may result in self ignition and fire is missing.
- (c) For the class 4.2 and 5.2 hazards the description "Risk of fire. Flammable or combustible, may be ignited by heat, sparks or flames" is missing. This description should be added, because these substances have indeed this risk and are never assigned a subrisk of 4.1.
- (d) For the class 5.1 hazard the description "Risk of ignition and Explosion" is not characteristic for these substances (see ADR/ADN 2.2.51.2.1) and only makes sense in relation to the reactivity with combustible substances."

3. Hazards indicated by marks have been ignored although in case of emergency it would be helpful for the driver to have an overview of all indications of hazards. Therefore adding the marks for environmental hazardous substances and elevated temperature substances, as well as the fumigation warning sign should be considered and it is proposed adding a supplementary table.

4. A number of terms and descriptions could be amended in an effort to make the hazards better understood by drivers

- (a) Generally the term „exothermic“ is a scientific term and is proposed to be replaced by the more common term “vigorous“
- (b) For the class 6.1 hazard the ways of exposure "by inhalation, by skin contact or by ingestion" is proposed to be added.
- (c) For the class 6.2 hazard it is proposed adding "May cause serious disease in humans or animals."
- (d) For the class 8 hazard a statement about the risk of corrosive vapours should be added "Spilled substance may evolve corrosive vapours."
- (e) The assignment of the hazard characteristics for class 9 is formally correct but too complex to be helpful for the driver. Because environmentally hazardous substances of UN 3077 and 3082 are by far the most shipped substances of class

9, the hazard description is in the most cases misleading and therefore the entry for class 9 could be split in two.

5. A few provisions for the emergency equipment could be amended:
  - (a) Shovel, drain seal and collecting container are assigned to danger label numbers 3, 4.1, 4.3, 8 or 9. The purpose of this equipment is not to handle spilled dangerous goods but to enable the driver to carry soil, sand or the like to fix the drain seal or to build a small wall. This makes no sense for gases, e.g. UN 1005 ammonia, anhydrous, 2.3 (8) and only in a very limited way for solids. This should be considered in footnote (c) in 5.4.3 and in footnote (4) in 8.1.5.3 by limiting this requirement to liquids
  - (b) The minimum volume of eye rinsing liquid should be determined and 500 ml is being proposed.
6. Two general amendments are also being proposed
  - (a) The instruction "Prevent leakages into the aquatic environment or the sewage system is already included at the first page one and should not be repeated in the Table
  - (b) The fact that any containment may burst when heated should be included in the general actions on page 1.

#### Proposal

7. Subsections 5.4.3.4 and 8.1.5.2 are proposed to be amended as in Annex (new text underlined – obsolete text struck-through)

#### Justification

8. The proposed amendments will make the instructions in writing more accurate and readily understood by drivers

#### Safety

9. Safety will be increased

#### Feasibility

10. The economic effort for implementing a revision of the four page model is justified by the increase in safety. However in order to leave sufficient time for the carriers to obtain the documents in all required languages and to enable them to provide these to the drivers, a transitional period up to [31-12-2012] could be envisaged in chapter 1.6. In this period the use of both versions would be allowed.

Annex

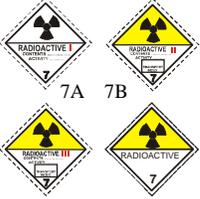
INSTRUCTIONS IN WRITING
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Actions in the event of an accident or emergency

In the event of an accident or emergency that may occur or arise during carriage, the members of the vehicle crew shall take the following actions where safe and practicable to do so:

- Apply the braking system, stop the engine and isolate the battery by activating the master switch where available;
- Avoid sources of ignition, in particular, do not smoke or switch on any electrical equipment;
- Inform the appropriate emergency services, giving as much information about the incident or accident and substances involved as possible;
- Put on the warning vest and place the self-standing warning signs as appropriate;
- Keep the transport documents readily available for responders on arrival;
- Do not walk into or touch spilled substances and avoid inhalation of fumes, smoke, dusts and vapours by staying up wind;
- Where appropriate and safe to do so, use the fire extinguishers to put out small/initial fires in tyres, brakes and engine compartments;
- Fires in load compartments shall not be tackled by members of the vehicle crew. Independent from the class of the carried substances, containments may burst when heated;
- Where appropriate and safe to do so, use on-board equipment to prevent leakages into the aquatic environment or the sewage system and to contain spillages;
- Move away from the vicinity of the accident or emergency, advise other persons to move away and follow the advice of the emergency services;
- Remove any contaminated clothing and used contaminated protective equipment and dispose of it safely.

Additional guidance to members of the vehicle crew on the hazard characteristics of dangerous goods by class and on actions subject to prevailing circumstances		
Danger labels and placards	Hazard characteristics	Additional guidance
(1)	(2)	(3)
Explosive substances and articles  1 1.5 1.6	May have a range of properties and effects such as mass detonation; projection of fragments; intense fire/heat flux; formation of bright light, loud noise or smoke. Sensitive to shocks and/or impacts and/or heat.	Take cover but stay away from windows.
Explosive substances and articles  1.4	Slight risk of explosion and fire.	Take cover.
Flammable gases  2.1	Risk of fire. Risk of explosion. May be under pressure. Risk of asphyxiation. May cause burns and/or frostbite. Containments may explode when heated.	Take cover. Keep out of low areas.
Non-flammable, non-toxic gases  2.2	Risk of asphyxiation. May be under pressure. May cause frostbite. Containments may explode when heated.	Take cover. Keep out of low areas.
Toxic gases  2.3	Risk of intoxication. May be under pressure. May cause burns and/or frostbite. Containments may explode when heated.	Use emergency escape mask. Take cover. Keep out of low areas.
Flammable liquids  3	Risk of fire. Risk of explosion. Containments may explode when heated. <u>For liquid desensitized substance, risk of explosion after loss of desensitizer</u>	Take cover. Keep out of low areas. <del>Prevent leaking substances from running into the aquatic environment or the sewage system.</del>
Flammable solids, self-reactive substances and desensitized explosives  4.1	Risk of fire. Flammable or combustible, may be ignited by heat, sparks or flames. May contain self-reactive substances that are liable to <del>exothermic</del> <u>vigorous</u> decomposition in the case of heat supply, contact with other substances (such as acids, heavy-metal compounds or amines), friction or shock. This may result in the evolution of harmful and flammable gases or vapours <u>or self-ignition</u> . Containments may explode when heated. <u>Risk of explosion of desensitized substances after loss of desensitizer.</u>	<del>Prevent leaking substances from running into the aquatic environment or the sewage system.</del>
Substances liable to spontaneous combustion  4.2	Risk of spontaneous combustion if packages are damaged or contents are spilled. May react vigorously with water <u>Risk of fire. Flammable or combustible, may be ignited by heat, sparks or flames.</u>	
Substances which, in contact with water, emit flammable gases  4.3	Risk of fire and explosion in contact with water.	Spilled substances should be kept dry by covering the spillages.

Danger labels and placards	Hazard characteristics	Additional guidance
(1)	(2)	(3)
<p>Oxidizing substances</p>  <p>5.1</p>	<p>Risk of ignition and explosion <u>in contact with combustible substances.</u></p> <p>Risk of vigorous reaction in contact with flammable substances.</p>	<p>Avoid mixing with flammable or combustible substances (e.g. sawdust).</p>
<p>Organic peroxides</p>  <p>5.2</p>	<p>Risk of <del>exothermic</del> <u>vigorous</u> decomposition at elevated temperatures, contact with other substances (such as acids, heavy-metal compounds or amines), friction or shock. This may result in the evolution of harmful and flammable gases or vapours or <u>self-ignition.</u></p> <p><u>Risk of fire. Flammable or combustible, may be ignited by heat, sparks or flames.</u></p>	<p>Avoid mixing with flammable or combustible substances (e.g. sawdust).</p>
<p>Toxic substances</p>  <p>6.1</p>	<p>Risk of intoxication <u>by inhalation, by skin contact or by ingestion.</u></p> <p>Risk to the aquatic environment and the sewerage system.</p>	<p>Use emergency escape mask.</p>
<p>Infectious substances</p>  <p>6.2</p>	<p>Risk of infection. <u>May cause serious disease in humans or animals.</u></p> <p>Risk to the aquatic environment and the sewerage system.</p>	
<p>Radioactive material</p>  <p>7A 7B 7C 7D</p>	<p>Risk of intake and external radiation.</p>	<p>Limit time of exposure.</p>
<p>Fissile material</p>  <p>7E</p>	<p>Risk of nuclear chain reaction.</p>	
<p>Corrosive substances</p>  <p>8</p>	<p>Risk of burns by <u>skin corrosion.</u></p> <p>May react vigorously with each other, with water and with other substances.</p> <p><u>Spilled substance may evolve corrosive vapours.</u></p> <p>Risk to the aquatic environment and the sewerage system.</p>	<p><del>Prevent leaking substances from running into the aquatic environment or the sewerage system.</del></p>
<p>Miscellaneous dangerous substances and articles</p>  <p>9</p>	<p>Risk of burns by <u>heat.</u></p> <p>Risk of fire.</p> <p>Risk of explosion.</p> <p>Risk to the aquatic environment and the sewerage system.</p> <p><u>Risk of long term health effects (e.g. carcinogen, mutagen)</u></p>	<p><del>Prevent leaking substances from running into the aquatic environment or the sewerage system.</del></p>
	<p><u>UN numbers, other than UN 3077 or 3082</u></p> <p><u>UN3077</u> <u>or</u> <u>UN 3082</u></p>	<p><u>Risk to the aquatic environment and the sewerage system</u></p>

**NOTE 1:** For dangerous goods with multiple risks and for mixed loads, each applicable entry shall be observed.

**NOTE 2:** Additional guidance shown above may be adapted to reflect the classes of dangerous goods to be carried and their means of transport.

<b><u>Additional guidance to members of the vehicle crew on the hazard characteristics of dangerous goods, indicated by marks or warning signs, and on actions subject to prevailing circumstances</u></b>		
<b><u>Mark or warning sign</u></b>	<b><u>Hazard characteristics</u></b>	<b><u>Additional guidance</u></b>
<b><u>(1)</u></b>	<b><u>(2)</u></b>	<b><u>(3)</u></b>
 <p>Environmentally hazardous substances</p>	<p><u>Risk to the aquatic environment and the sewerage system</u></p>	
 <p>Elevated temperature substances</p>	<p><u>Risk of burns by heat.</u></p>	<p><u>Avoid contact with hot parts of the transport unit.</u></p>
 <p>Fumigated vehicles, containers and tanks</p>	<p><u>Risk of intoxication by fumigant.</u></p>	<p><u>Keep out of fumigated vehicles, containers and tanks.</u></p>

**Equipment for personal and general protection to carry out general actions and hazard specific emergency actions to be carried on board the vehicle in accordance with section 8.1.5 of ADR**

The following equipment shall be carried on board the transport unit for all danger label numbers:

- for each vehicle, a wheel chock of a size suited to the maximum mass of the vehicle and to the diameter of the wheel;
- two self-standing warning signs;
- eye rinsing liquid<sup>a</sup> with a minimum total volume of 500 ml; and

for each member of the vehicle crew

- a warning vest (e.g. as described in the EN 471 standard);
- portable lighting apparatus;
- a pair of protective gloves; and
- eye protection (e.g. protective goggles).

Additional equipment required for certain classes:

- an emergency escape mask<sup>b</sup> for each member of the vehicle crew shall be carried on board the vehicle for danger label numbers 2.3 or 6.1;
- a shovel<sup>c</sup>;
- a drain seal<sup>c</sup>;
- a collecting container made of plastics<sup>c</sup>.

<sup>a</sup> Not required for danger label numbers 1, 1.4, 1.5, 1.6, 2.1, 2.2 and 2.3.

<sup>b</sup> For example an emergency escape mask with a combined gas/dust filter of the A1B1E1K1-P1 or A2B2E2K2-P2 type which is similar to that described in the EN 141 standard..

<sup>c</sup> Only required for [solids and] liquids with danger label numbers 3, 4.1, 4.3, 8 and 9.