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**Committee of Experts on the Transport of Dangerous Goods
and on the Globally Harmonized System of Classification
and Labelling of Chemicals****Sub-Committee of Experts on the Transport of Dangerous Goods****Forty-first session**

Geneva, 25 June – 4 July 2012

Item 5 (d) of the provisional agenda

**Miscellaneous proposals of amendments to the Model Regulations
on the Transport of Dangerous Goods: miscellaneous****Packing Group of UN 3316****Transmitted by the expert from Germany¹****Introduction**

1. Provisions for the use of substances presenting a risk of asphyxiation when used for cooling or conditioning purposes have been included in the seventeenth revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations, see new section 5.5.3.
2. The expert from Germany received several questions on the scope of the provisions. For many users it is not clear which requirements apply to cargo transport units containing packages with cooling/conditioning substances and/or to cargo transport units containing unpackaged cooling/conditioning substances. The heading of 5.5.3 clearly indicates that section 5.5.3 applies to both cases, but this is not explicitly stated in each single paragraph. Only 5.5.3.5 is meant as a special, additional requirement for unpacked dry ice. Furthermore the term “cargo transport units that have been cooled or conditioned” may cause some confusion and could be amended: Only the contained goods are cooled or conditioned, but not the cargo transport unit as such.

¹ In accordance with the programme of work of the Sub-Committee for 2011-2012 approved by the Committee at its fifth session (refer to ST/SG/AC.10/C.3/76, para. 116 and ST/SG/AC.10/38, para. 16).

Proposal

3. The wording of 5.5.3 should be amended as follows: (Amendments are shown as track changes).

5.5.3 Special provisions applicable to packages and cargo transport units containing substances presenting a risk of asphyxiation when used for cooling or conditioning purposes (such as dry ice (UN 1845) or nitrogen, refrigerated liquid (UN 1977) or argon, refrigerated liquid (UN 1951))

5.5.3.1 Scope

5.5.3.1.1 This section is not applicable to substances which may be used for cooling or conditioning purposes when transported as a consignment of dangerous goods. When they are transported as a consignment, these substances shall be transported under the relevant entry of the Dangerous Goods List in Chapter 3.2 in accordance with the associated conditions of transport.

5.5.3.1.2 This section is not applicable to gases in cooling cycles.

5.5.3.1.3 Dangerous goods used for cooling or conditioning portable tanks during transport are not subject to this section.

5.5.3.1.4 Cargo transport units containing substances used for cooling or conditioning purposes include cargo transport units containing packages with substances used for cooling or conditioning purposes as well as cargo transport units with unpackaged substances used for cooling or conditioning purposes.

5.5.3.2 General

5.5.3.2.1 Cargo transport units containing substances used for cooling or conditioning purposes (other than fumigation) during transport are not subject to any provisions of these Regulations other than those of this section.

5.5.3.2.2 When dangerous goods are loaded in ~~cooled or conditioned~~ cargo transport units containing substances used for cooling or conditioning purposes any provisions of these Regulations relevant to these dangerous goods apply in addition to the provisions of this section.

5.5.3.2.3 For air transport, arrangements between consignor and operator shall be made for each consignment, to ensure that ventilation safety procedures are followed.

5.5.3.2.4 Persons engaged in the handling or transport ~~of cooled or conditioned~~ cargo transport units containing substances used for cooling or conditioning purposes shall be trained commensurate with their responsibilities.

5.5.3.3 Packages containing a coolant or conditioner

5.5.3.3.1 Packaged dangerous goods requiring cooling or conditioning assigned to packing instructions P203, P620, P650, P800, P901 or P904 shall meet the appropriate requirements of that packing instruction.

5.5.3.3.2 For packaged dangerous goods requiring cooling or conditioning assigned to other packing instructions the packages shall be capable of withstanding very low temperatures and shall not be affected or significantly weakened by the coolant or conditioner. Packages shall be designed and constructed to permit the release of gas to prevent a build-up of pressure that could rupture the packaging. The dangerous goods shall be packed in such a way to prevent movement after the dissipation of any coolant or conditioner.

5.5.3.3.3 Packages containing a coolant or conditioner shall be transported in well ventilated cargo transport units.

5.5.3.4 *Marking of packages containing a coolant or conditioner*

5.5.3.4.1 Packages containing dangerous goods used for cooling or conditioning purposes shall be marked with the proper shipping name of these dangerous goods followed by the words "AS COOLANT" or "AS CONDITIONER" as appropriate.

5.5.3.4.2 The markings shall be durable, legible and placed in such a location and of such a size relative to the packaging as to be readily visible.

5.5.3.5 *Cargo transport units containing unpackaged dry ice*

5.5.3.5.1 If dry ice in unpackaged form is used, it shall not come into direct contact with the metal structure of a cargo transport unit to avoid embrittlement of the metal. Measures shall be taken to provide adequate insulation between the dry ice and the cargo transport unit by providing a minimum of 30 mm separation (e.g. by using suitable low heat conducting materials such as timber planks, pallets etc).

5.5.3.5.2 Where dry ice is placed around packages, measures shall be taken to ensure that packages remain in the original position during transport after the dry ice has dissipated.

5.5.3.6 *Marking of cargo transport units*

5.5.3.6.1 Cargo transport units containing dangerous goods used for cooling or conditioning purposes shall be marked with a warning mark, as specified in 5.5.3.6.2 affixed at each access point in a location where it will be easily seen by persons opening or entering the cargo transport unit. This mark shall remain on the cargo transport unit until the following provisions are met:

- (a) The cargo transport unit has been ventilated to remove harmful concentrations of coolant or conditioner; and
- (b) The cooled or conditioned goods have been unloaded.

5.5.3.6.2 The warning mark shall be rectangular and shall not be less than 150 mm wide and 250 mm high. The warning mark shall include:

- (a) The word "WARNING" in red or white with lettering not less than 25 mm high; and
- (b) The proper shipping name followed by the words "AS COOLANT" or "AS CONDITIONER" as appropriate, shown below the symbol in black letters on a white background with lettering not less than 25 mm high.

For example: CARBON DIOXIDE, SOLID, AS COOLANT.

An illustration of this mark is given in Figure 5.5.2

Figure 5.5.2



* Insert the proper shipping name followed by the words "AS COOLANT" or "AS CONDITIONER" as appropriate

5.5.3.7 Documentation

5.5.3.7.1 Documents (such as a bill of lading or cargo manifest) associated with the transport of cargo transport units containing or have contained substances used for cooling or conditioning purposes ~~that have been cooled or conditioned~~ and have not been completely ventilated before transport shall include the following information:

- (a) The UN number preceded by the letters "UN"; and
- (b) The proper shipping name followed by the words "AS COOLANT" or "AS CONDITIONER" as appropriate.

For example: UN 1845, CARBON DIOXIDE, SOLID, AS COOLANT"

5.5.3.7.2 The transport document may be in any form, provided it contains the information required in 5.5.3.7.1. This information shall be easy to identify, legible and durable."