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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****Fortieth session**

Geneva, 28 November – 7 December 2011

Item 2 (c) of the provisional agenda

**Listing, classification and packing: miscellaneous****Special Provision 335: Exemption for small quantities of  
environmentally hazardous substances****Transmitted by the International Council of Chemical Associations  
(ICCA)<sup>1</sup>****Introduction**

1. Environmentally hazardous substances with no additional hazards are often transported in very small quantities according to Special Provision 335, which exempts these very small quantities from the UN Model Regulations, as they pose no risk during the transport, provided certain requirements are met. The exemption is valid for solid substances (< 10 g) and for liquids soaked in a non hazardous solid, contained in sealed packets and articles. ICCA would like to add a similar exemption for very small amounts of environmentally hazardous liquids to Special Provision 335.
2. Currently substances of UN 3082 can be transported as limited quantity in inner packagings, up to 5 L, with a maximum total gross mass of the package of 30kg. The packagings have to comply with the general packing requirements (4.1.1.1, 4.1.1.2, and 4.1.1.4 to 4.1.1.8 and construction requirements 6.1.4 only.)
3. For an exemption from marking requirements as laid down in the Limited Quantity provisions (3.4.7, 3.4.8), ICCA proposes a packaging which is able to absorb the total amount of liquid in the package. To achieve this, the maximum amount per inner package should be limited to a small amount and only combination packages should be permitted.

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<sup>1</sup> 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).

This will ensure that either the packaging itself will act as an absorbent (e.g. an inner and outer packaging made of fibreboard or similar material), or in case e.g. of an outer plastic packaging, either the inner package will absorb the total amount of the liquid or absorbent material is added.

4. Concerning the maximum content of inner packages, experience in the last years shows that transports of liquid environmentally hazardous substances (UN3082) in inner packages of  $\leq 10$  ml have never posed any hazard, even if the inner packages were damaged during the transport. The amount of liquid is so small, that the packaging material acts as an absorbent making it impossible for the liquid to escape into the environment. This addresses the packaging requirements of 4.1.1.5.

5. Whereas the limited quantity provisions refer to the requirements of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 it should be noted that packaging requirements 4.1.1.6 and 4.1.1.7 do not apply to environmentally hazardous liquids

6. To evaluate whether the packaging can act as an absorbent and to show that no liquid can leak from the prescribed package, even if all inner packagings are destroyed, a test has been carried out by Bayer Health Care demonstrating that the outer packaging and the inner packagings, with the full content of liquid, can withstand for more than half a day. The description of this test can be found in the Annex. It shows that no liquid escapes from the packaging: there are only some traces of moisture on the inner surface of the outer package, but the outer surface of the outer package does not show any traces of the spilled liquid.

## Proposal

7. ICCA therefore proposes inserting the (underlined) text as follows to Special Provision 335:

- 335 Mixtures of solids which are not subject to these Regulations and environmentally hazardous liquids or solids shall be classified as UN 3077 and may be carried under this entry provided there is no free liquid visible at the time the substance is loaded or at the time the packaging or cargo transport unit is closed. Each cargo transport unit shall be leakproof when used as a bulk container. If free liquid is visible at the time the mixture is loaded or at the time the cargo transport unit is closed, the mixture shall be classified as UN 3082. Sealed packets and articles containing less than 10 ml of an environmentally hazardous liquid, absorbed into a solid material but with no free liquid in the packet or article or containing less than 10 g of an environmentally hazardous solid are not subject to these Regulations. Inner packagings containing  $\leq 10$  ml of an environmentally hazardous liquid packed in a combination packaging not exceeding 30 kg total gross mass conforming to general packing provisions 4.1.1.1, 4.1.1.2, 4.1.1.4, and 4.1.1.8 and meeting the construction requirements of 6.1.4 are not subject to these Regulations, if the packaging prevents any leakage of the liquid, either by the packaging material itself or by using an intermediate packaging (plastic bag, blister or similar) or by adding absorbing material.

## Annex

### Special Provision 335 - leakage test - Fibreboard box containing pipettes without additional absorbent material

#### Intention

1. The test has been conducted to show that small inner packages (in this case plastic pipettes) can be dispatched in a fibreboard box without additional absorbent material. Even in case of complete leakage of all inner packages, the absorbent capacity of the packaging material (in the fibreboard box and the fibreboard box itself) needs to be sufficient to completely absorb all spilled liquid.

#### Bill of material

2. (Example) ([Picture 1](#))

1 Blister containing 4 pipettes, each pipette with 4 ml of solution, is packed in 1 folding box with 1 leaflet.

12 folding boxes are packed into 1 display-cardboard box.

10 display-cardboard boxes are packed into 1 fibreboard box . This results in a total net quantity of liquid in this packaging of 1.920 ml, (= 480 pipettes in 120 blisters)

#### Setup of experiment

3. The test had to be performed *without* filled *pipettes* and *blisters*, only the display cardboard boxes were used packaged in a fibreboard box. Water was chosen as a replacement for the solution (UN3082). The properties of the original solution and water can be expected to be similar regarding the absorbent properties, as the solution is based on water as solvent. The injection of 12 ml of water into each open folding box including a leaflet was made with disposable syringe. After wetting the individual folding boxes, an additional 48 ml of water were injected into each display cardboard box, resulting in a total liquid volume of 1.920 ml. The wetting of the packing material took place over a period of 2,5 hours.

#### Result

4. The fibreboard box was assessed from the outside (each sidewall and the bottom of the fibreboard box)

(a) After the last injection

- No leakage or moisture was visible ([Picture 2](#))

(b) After 30 minutes

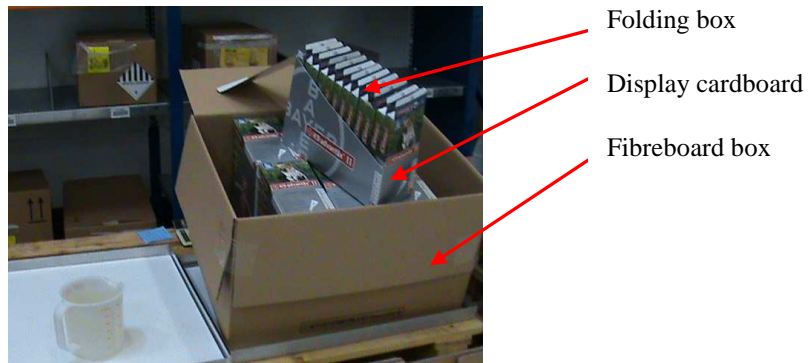
- No leakage, no discoloration or moisture, was visible

(c) After 960 minutes

- Inner packagings are wet, but still kept their shape (Picture 3)
- Inside the fibreboard box side walls (lower range) and bottom are discoloured (Picture 4) and damp
- No liquid leaks outside of the fibreboard box. Precipitation (inside) was visible from outside in the area of the transparent tape. No discoloration and soaking of the sidewalls and bottom. (Picture 5)

## Conclusion

5. The strength and stability of the fibreboard box is not affected by the spilled liquid and no liquid could escape from the package into the environment.



**Picture 1: Packaging types**



**Picture 2: Filled with inner packages, which are wetted with a total amount 1.920 ml (after the last injection)**



**Picture 3: View on outer and inner packages after 960 min**



**Picture 4: View inside the outer package after removing the inner packages (960 min after wetting package):**



**Picture 5: Outside view on outer package after 960 min**