

COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS AND ON THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS

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LISTING, CLASSIFICATION AND PACKING

Air ventilation of packagings including IBCs

Transmitted by the expert of Germany

Background

1. Packages may be equipped with venting devices in accordance with the provisions in 4.1.1.8. It is obvious that the wording of 4.1.1.8 does not allow devices for the aeration of the packages in cases of inner pressure reduction. Furthermore, it is explicitly stated that “*the vent shall be so designed that the penetration of foreign substances (e.g. air or moisture) (is) prevented under normal conditions of carriage*”.
2. There is a growing demand for aerated packages for some specific applications and shipping situations. As example, inner pressure reduction may occur in packages after being filled with heated substances and being closed shortly after. Other reasons for the appearance of low-pressure in packages may be, for example,
 - Whenever tightly closed packages are shipped from mountainous regions to sea level, or
 - Whenever not gas-tight packages (e.g. packagings with removable heads intended for the carriage of solids) are shipped on a long-distance flight by aircraft.
3. Liquid-tight plastics vents (e.g. membranes or porous plastics) can act as overpressure devices as well as vacuum devices depending only on the developed positive or negative pressure differential between the internal and the external atmosphere of the package. These types of venting devices are widely-used since years for the transport of dangerous goods packagings including IBCs, even though the existing provisions in 4.1.1.8 only allow the use of venting devices when overpressure may develop in a package by emission of gas from the contents.
4. As packagings (including IBCs) are only designed and tested for internal overpressure, already a slight inner pressure reduction can lead to permanent deteriorations of the packagings which could adversely affect transport safety or can even lead to a collapse of the package.

Considering this risk an implementation of the use of air ventilation devices into the provisions seems to be an adequate approach.

Proposal

Amend the existing 4.1.1.8 as follows:

4.1.1.8 Venting

4.1.1.8.1 Where pressure may develop in a package by the emission of gas from the contents (as a result of temperature increase or other causes), the packaging or IBC may be fitted with a vent provided that the gas emitted will not cause danger on account of its toxicity, its flammability or the quantity released, for example.

A venting device shall be fitted if dangerous overpressure may develop due to normal decomposition of substances. The vent shall be so designed that, when the packaging or IBC is in the attitude in which it is intended to be carried, leakages of liquid and the penetration of foreign substances are prevented under normal conditions of carriage, except for aeration in accordance with 4.1.1.8.2.

4.1.1.8.2 Where low-pressure may develop in a package, the packaging may be fitted with an air ventilation device, provided that the ventilation by ambient air, including atmospheric moisture, will not cause dangerous reactions with the contained dangerous good(s) and the packaging design type equipped with the air ventilation device has successfully passed the applicable design type tests according to 6.1.5, 6.5.6 and 6.6.5. Automatically actuated vacuum-relief devices shall be constructed so as to close the packaging tightly after pressure equalisation. Devices having the combined function of venting devices and air ventilation devices may be used, provided the provisions of 4.1.1.8.1 are met.

NOTE : Packages may be in any case fitted with manually operated air ventilation devices for filling and emptying, if they are closed during carriage and the packaging design type equipped with such devices has successfully passed the applicable design type tests according to 6.1.5, 6.5.6 and 6.6.5. Frangible discs are not allowed as air ventilation devices, as packagings are not tightly closed after their actuation.

Renumber the existing 4.1.1.8.1 and 4.1.1.8.2
