

## 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

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Item 3 (b) of the provisional agenda

**Listing, classification and packing: miscellaneous**

## Definition of the Term “Vent”

### Transmitted by the Dangerous Goods Advisory Council (DGAC)

### Introduction

1. Based on 4.1.7.0.1, packagings for organic peroxides, which may develop a significant internal pressure in a package, may be fitted with a vent provided certain requirements are met (i.e., the emitted gas will not cause danger, the venting device must prevent ingress of impurities and the outer packaging must not interfere with venting device operation). At the same time 4.1.1.8.2 prohibits the use of a vent on packagings intended for air transport. For certain substances in small packagings, this prohibition introduces transport difficulties that appear unwarranted, considering the packaging integrity that is provided and the small amount of gas released.

2. An example is peracetic (or peroxyacetic) acid (Organic peroxide type F, liquid  $\leq$  37% peracetic acid and  $\leq$  7.5% hydrogen peroxide, UN 3109) which is permitted for air transport. In this concentration, this product is commonly used as a sterilant for health care purposes and there is a need to transport this material by air, worldwide for use in sterilizing medical equipment using custom packagings. The hydrogen peroxide slowly releases oxygen. While pressure build-up inside the packaging over the normal shelf life is an option, for safety purposes the product manufacturer recommends the use of a vented package.

3. For this medical device application, a hydrophobic membrane built into the closure controls the pressure in the inner packaging while preventing the release of liquid contents. For the devices in question, the average release rate is 0.1 ml of oxygen per hour per inner packaging and 20 such inner packagings are normally transported per outer packaging. The 2 ml of oxygen that is released from the outer packaging per hour is considered inconsequential from a safety perspective. Without sealing, the hydrophobic membrane withstands the 95 kPa pressure differential requirement applicable to packagings intended for liquids used for air transport and the completed package satisfies the performance tests and the conditions in 4.1.7.0.1. In this respect, DGAC even questions whether a membrane would be considered a “vent” as the term is used in the regulations.

4. For such instances, DGAC proposes to permit release of small quantities of gases in the case of air transport by a revision to 4.1.1.8.2.

## Proposal

5. DGAC proposes to revise 4.1.1.8.2 to read as follows:

4.1.1.8.2 Venting of the package is not permitted for air transport. A membrane that releases a gas that will not cause danger at a rate of not more than 5 ml per hour is not considered a vent for purposes of this requirement.

Alternatively DGAC proposes to add to 4.1.1.8.2:

4.1.1.8.2 Venting of the package is not permitted for air transport, except that packages with inner packagings meeting the applicable requirements (i.e., 4.1.7.0.1 and withstanding a 95 kPa pressure differential) releasing gas at a rate of not more than 5 ml per hour are permitted.

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