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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

**(Twenty-first session, 1-10 July 2002,
agenda item 6 (b))**

PACKAGINGS

**Proposal to reduce the required minimum ullage for packagings for Hydrogen peroxide
in concentration equal or greater than 20 % but not more than 60 % (UN 2014)**

Submitted by ICCA

Background

1. Packagings filled with Hydrogen peroxide in concentration equal or greater than 20 % but not more than 60 % have to be filled to a maximum degree of filling of 90 %, i.e. a minimum ullage of 10 % has to be left.
2. This restrictive minimum ullage is neither required for other dangerous goods with similar properties nor for other containments for Hydrogen peroxide (such as IBCs or tanks).
3. Pursuant to the dangerous goods regulations for the sea mode valid before 1 January 2001 (IMDG Code, 29th amdt), packagings filled with Hydrogen peroxide in concentration equal or greater than 20 % but not more than 60 % must be vented and a minimum ullage of 10 % have to be left.
4. Pursuant to the dangerous goods regulations for the European land mode (ADR/RID) valid before 1 July 2001 no specific minimum ullage requirement for Hydrogen peroxide concentrations equal or greater than 20 % but not more than 60 % were required, but only the standard degree of filling requirements for packagings.
5. Due to the global initiative to harmonize the modal dangerous goods regulations (particularly the packaging regulations), the requirement “10 % minimum ullage” of the IMDG Code was imported into the UN Model Regulations when creating the UN Packing Instructions, i.e. at that time obviously it was reduced to the most critical common denominator.
6. Through the UN Model Regulations now even the land mode regulations require the restrictive ullage of 10 % minimum.

Reasoning

7. ICCA is of the opinion, that the minimum ullage of 10 % for Hydrogen peroxide in concentration equal or greater than 20 % but not more than 60 % is not justified and unnecessary under safety aspects, as far as the packagings are vented and the vent is so designed, that leakage of contents and penetration of foreign matter is prevented under normal conditions of transport.
8. In this context it should be taken into account, that for the shipment of Hydrogen peroxide vented packagings are the state of engineering and the most common type of packaging. To the knowledge of ICCA there are no failures of the venting system recorded which were cause of leakages/incidents. Hence, the standard ullage requirements pursuant to subsection 4.1.1.4 are sufficient.
9. ICCA doubts whether for hermetically closed packagings a minimum ullage of 10 % is enough to take the emitted oxygen, particularly for longer transit times and/or elevated temperatures as encountered during sea voyages.
10. Further such a restrictive ullage is neither required for any other dangerous goods of similar hazard potential and properties, nor for other types of containment for Hydrogen peroxide (such as IBCs or portable tanks), nor by the CFR 49.
11. By this unjustified minimum ullage requirement Hydrogen peroxide in concentration equal or greater than 20 % but not more than 60 % would be stigmatized by the dangerous goods regulations as the one and only dangerous substance requiring such a restrictive minimum ullage in packagings. This contradicts the philosophy of the rationalized approach.
12. Moreover the unjustified ullage requirement cause adverse and effects (such as traffic density, CO₂ emission, packaging material, probability of incidents, consumption of natural resources) which should be avoided under aspects of environmental protection and sustainable development.

Proposal

13. Considering the afore mentioned, ICCA is of the opinion, that the special packing provision PP 29 should be modified/added (see the part in bold type and underlined) to read as follows:
“For UN 2014, packagings shall have a minimum ullage of 10 % [xy %] **OR shall be vented**”
 14. If the discussion would lead to a consensus of the majority, then ICCA would submit an official proposal to the 22nd session of the UNCETDG for adoption still within this biennium.
 15. The part in square brackets is just for discussion, i.e. if a majority would be of the opinion, that for hermetically closed packagings the minimum ullage should even be extended for safety reasons, then ICCA would undertake tests to find out a minimum ullage taking safety better into account. This would be included in the proposal to be submitted to the 22nd session of the UNCETDG.
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