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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-fifth session, 5-14 July 2004
Item 2 of the provisional agenda

TRANSPORT OF GASES

Comments on document ST/SG/AC.10/C.3/2004/5

EIGA Proposal to amend the criterion for classifying gas mixtures as oxidizing

Transmitted by the expert from Germany

Introduction

Oxidizing gases are defined in Chapter 2.2 as “gases which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does”.

The concentration of oxygen in ambient air is at 21 % per volume since thousands of years; it is a constant value, a natural constant, similar to the freezing point and the boiling point of water which are the reference points of the Celsius Temperature Scale.

In Chapter 3.3 of the 1999 edition of the Model Regulations, Special Provision 292 – not 297 as in ST/SG/AC.10/C.3/2004/5 - was added to clarify that *UN 1002 Air, compressed* includes oxygen/nitrogen mixtures up to 23.5 % oxygen.

Special Provision 292 reads as follows:

> "Only mixtures with not more than 23.5% oxygen may be transported under this entry. A Division 5.1 subsidiary risk label is not required for any concentration within this limit."

This Special Provision 292 was added after a proposal from the representative of the United States of America where this limit already existed in CFR49. This proposal has been supported because it reflected industry practices. The Gases Industry does not take special precautions for mixtures containing less than 23.5 % of oxygen, since changes in the amount of oxygen have only a minor influence on the reactivity of these mixtures at these concentrations.

It should be borne in mind that by this Special Provision only the assignment to the entry *UN 1002 Air, compressed* and the labelling of such shipments are adressed. The intention of the Special Provision 292 is to facilitate the industry practice for the production of synthetic air without changing the oxygen limit for the definition of oxidizing gases.

This limit has been introduced into ADR and RID for the definition of oxidizing gases by adding a reference to *ISO 10156:1996 Determination of fire potential and oxidizing ability for the selection of cylinder valve outlets.*

The criterion in ISO 10156 is:

$$\mathrm{OP} = \sum_{\mathrm{i}} x_i \, C_{\mathrm{i}} \geq 21$$

Following the above mentioned reasons for the addition of Special Provision 292 to the entry *UN 1002 Air, compressed* and having in mind that the wording fulfils the intention to facilitate industry practice without reducing transport safety, there is no reason for any change with respect to the classification of oxidizing gas mixtures containing oxygen and inert gases.

Proposal

Do not adopt the proposal in document ST/SG/AC.10/C.3/2004/5 to increase the lower oxygen limit for oxidizing gases, containing oxygen and inert gases, from the oxygen concentration of ambient air – 21 % per volume – to the artificial and commercial value of 23.5 % per volume.
