UNITED NATIONS **ST**

Secretariat

Distr.
GENERAL

ST/SG/AC.10/C.3/2004/5
9 February 2004

ORIGINAL: ENGLISH

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

Proposals to amend the criterion for classifying gas mixtures as oxidizing

Transmitted by the European Industrial Gases Association (EIGA)

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 air is considered to be at 21%. ADR and RID specifies further that "Mixtures containing more than 21% oxygen by volume shall be classified as oxidizing".

In the 1999 edition of the Model Regulations, Special Provision 297 was added to clarify that *UN 1002 Air, compressed* includes oxygen/nitrogen mixtures up to 23.5 % oxygen.

This Special Provision 297 was added after a proposal from the representative of the United States of America where this limit already existed in CFR49. EIGA supported this proposal 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 rate of oxygen reactions are of no practical significance at this concentration.

Other gas mixtures containing oxygen should be classified by testing or by calculation methods adopted by ISO.

ADR and RID are more specific and have added 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

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

In summary:

- Mixtures containing up to 23.5% oxygen in nitrogen are classified differently if they are assigned to UN 1002 or to UN 1956;
- Mixtures containing up to 23.5% oxygen are classified differently if the base gas is nitrogen or is another inert gas;
- Mixtures containing 21% oxygen could be classified differently when the criteria of ISO 10156 (equal or more than) is followed or when the ADR/RID criteria (more than) is followed.

Proposal

EIGA proposes the following to eliminate the confusion.

The following note should be added to 2.2.2.1 (this note is similar to the one existing in ADR/RID but with the threshold of 23.5%):

> ***"NOTE:*** *Mixtures containing more than 23.5% oxygen by volume shall be classified as oxidizing."*

When adopted, this proposal will enable the corresponding revisions being proposed by ISO/TC58 to change the criterion in ISO 10156 from 21% to more than 23.5%.

Justification

In summary, the proposal can be justified under the following headings.

Safety implications
None; the proposal is in line with industry practices.

Feasibility
No problems are foreseen; it will only eliminate confusion.

Enforceability
No problems are to be expected.

_____