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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

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Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals

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ISSUES RELATING TO THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS)

Proposals to amend the criterion for classifying gas mixtures as oxidizing

Transmitted by the European Industrial Gases Association (EIGA) [*/]

Introduction

1. Oxidizing gases are defined in Chapter 2.2 of the United Nations Model Regulations on the Transport of Dangerous Goods and in Chapter 2.4 of the GHS as "***gases which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does***".

2. At the 25th session of the Sub-Committee of Experts on the Transport of Dangerous Goods, EIGA made a proposal (ST/SG/AC.10/C.3/2004/5 and INF. 41) to qualify more precisely the criteria ***"more than air does"***. How much is more? 1 ppm? 1000 ppm? 1% from the normal concentration of 20.8% oxygen?

[*/] In accordance with the programme of work of the Sub-Committee for 2007-2008 approved by the Committee at its third session (refer to ST/SG/AC.10/C.3/60, para. 100 and ST/SG/AC.10/34, para. 14) (cooperation with the GHS Sub-Committee).

3. EIGA pointed out that industry does not take special precautions for gas mixtures containing less than 23.5% oxygen. As air (UN 1002) with SP292 was already accepted as being non-oxidizing up to a concentration of 23.5% oxygen, EIGA proposed to add a note to 2.2.2.1(b) which would read as follows:

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

4. This proposal was not adopted and the Sub-Committee decided to extend SP 292 to **UN 1956**.

5. This decision creates more problems than it solves.

(a) SP 292 is valid for mixtures where the oxygen is the only oxidizing gas, but UN 1956 applies to many mixtures where oxygen is not the sole oxidizing gases. This creates different classifications for similar mixtures; e.g.

(i) A mixture of **23.5%** O2 in Argon (UN 1006) is non-oxidising and can be transported under UN 1956;

(ii) A mixture of **21%** O2 with **100 ppm** of Nitrous oxide (UN 1070) in Argon is classified as oxidizing and has to be transported under *UN 3156 Compressed gas, oxidising, N.O.S*, although its oxidizing potential is lower than the mixture (i) above (23.5% O2 in AR).

(b) SP 292 does not apply for mixtures of oxygen with liquefied gases transported under UN entries for liquefied gases; e.g.

A mixture of **23.5%** O2 in carbon dioxide (UN 1013) is classified as oxidizing and has to be transported under *UN 3157 liquefied gas, oxidizing, N.O.S.* although it has the same oxy-potential as the mixture transported under UN 1956.

(c) The note under Table 2.4.1 of the GHS can be interpreted that air with up to 23.5% oxygen can be classified as non-oxidizing for transport regulations but not for other purposes which would make the labelling of the package ambiguous.

Proposal

6. In order to eliminate these inconsistencies and in order to be clearer, EIGA has amended its original proposal as follows:

The following note should be added to 2.2.2.1 (b) of the UN Model Regulations and should replace the Note under Table 2.4.1 of the GHS:

"NOTE: 'More oxidizing than air' means mixtures with more than 23.5% oxygen by volume in nitrogen or an equivalent concentration of other oxidizing gases in other gases with an oxidizing power of OP > 23.5% as determined by the latest revision of ISO 10156."

Justification

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

Safety implications

None; the proposal is in line with industry practices. The two standards ISO 10156:1995 and ISO 10156-2 are currently being revised and merged and the experts of ISO TC58/SC2/WG7 are waiting for the approval of the UN Sub-Committe to modify the criteria in the revised standard.

Feasibility

No problems are foreseen; it will only eliminate confusion.

Enforceability

No problems are to be expected.

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