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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 Globally Harmonized  
System of Classification and Labelling of Chemicals****Twentieth session**

Geneva, 7–9 December 2010

Item 2 (a) of the provisional agenda

**Updating of the third revised edition of the Globally Harmonized System  
of Classification and Labelling of Chemicals (GHS) – Physical hazards****Proposal to address simple asphyxiants in the GHS****Transmitted by the expert from the United States of America<sup>1</sup>****Purpose**

1. The purpose of this document is to provide recommendations to address simple asphyxiants in the GHS.

**Background**

2. Asphyxiation is a well known issue in the workplace. Simple asphyxiants displace oxygen from the air and can cause oxygen deprivation in those who are exposed, which may result in unconsciousness and death. These gases are a concern for those working in more or less confined spaces, as they are colorless and odorless and offer no warning properties.

3. During its seventeenth session, the Sub-Committee approved the programme of work to be undertaken by the practical classification issues informal correspondence group for the current biennium (see INF.5, 17th session), which included an item to address simple asphyxiants.

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<sup>1</sup> In accordance with the report of the Sub-Committee of Experts on its seventeenth session (see ST/SG/AC.10/C.4/34, paragraphs 34–36).

4. The practical classification issues informal correspondence group considered several proposals to address simple asphyxiants in the GHS, which included covering simple asphyxiants in Chapter 2.5 (Gases under Pressure), Chapter 3.1 (Acute toxicity), and Chapter 3.8 (Specific target organ toxicity – Single exposure). Based on early discussions, the informal correspondence group presented a proposal to address simple asphyxiants in Chapter 3.1 (Acute toxicity) to the Sub-Committee during its nineteenth session (see INF.24). However, during the informal correspondence group meeting in July, the group decided it would be more appropriate to address simple asphyxiants in Chapter 2.5 (Gases under pressure). Accordingly, the United States of America has taken the lead to prepare the proposal contained in this document, which incorporates comments from the perspectives of various participants (i.e. competent authorities and industry).

## Proposal

5. The Sub-Committee is asked to approve the recommended changes to include simple asphyxiants in the GHS, as provided hereafter. If approved, these changes would be incorporated into the next revised edition of the GHS.
6. This document and these recommendations are put before the Sub-Committee for consideration and approval.
7. Proposed editorial amendments to the GHS

### Chapter 2.5

(see INF.24 (19th session), Annex 1, item 3):

2.5.2 Insert 2.5.2.1 before the first paragraph.

2.5.2.2 Insert a new paragraph 2.5.2.2 as follows:

“2.5.2.2 *Simple asphyxiants*

2.5.2.2.1 In addition to classification into one of the four gases under pressure groups, if data are available that indicates that a substance or mixture may result in simple asphyxiation, certain authorities may also choose to require it to be labelled as a *simple asphyxiant*.

2.5.2.2.2 *Simple asphyxiants* are substances or mixtures that displace oxygen in the ambient atmosphere, and can thus cause oxygen deprivation in those who are exposed, leading to unconsciousness and death. The effects of simple asphyxiants are well known in the workplace and are of particular concern in more or less confined spaces. Well known examples of simple asphyxiants include: nitrogen, helium, neon, argon, krypton, and xenon. Evaluation of other gases as simple asphyxiants requires expert judgment to evaluate evidence such as human experience, information from similar substances, and other pertinent data (e.g. classification for acute inhalation toxicity).

2.5.3 Insert a Note under table 2.5.2 as follows:

“**NOTE:** *If a substance/mixture is determined to be a simple asphyxiant, competent authorities may choose to require the asphyxiation hazard be communicated by using the signal word “warning” and the hazard statement “May displace oxygen and cause suffocation”.*

**Consequential amendments to Chapter 1.2**

Insert the following new definition:

“*Simple asphyxiant* means a substance or mixture that displaces oxygen in the ambient atmosphere, and can thus cause oxygen deprivation in those who are exposed, leading to unconsciousness and death. See Chapter 2.5 of the GHS;”

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