

**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

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

Thirty-fourth session  
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Item 2 (a) and 7 of the provisional agenda

**ISSUES RELATING TO THE GLOBALLY HARMONIZED SYSTEM OF  
CLASSIFICATION AND LABELLING OF CHEMICALS (GHS)  
AND PROGRAMME OF WORK FOR THE BIENNIUM 2009-2010**

Physical hazards

Work of the informal working group on chemically unstable gases

Transmitted by the expert from Germany on behalf of the informal working group

**Introduction**

1. The last meeting of the informal working group on chemically unstable gases was held on July 7 and 8 just before the July 2008 session of the GHS Sub-Committee. An informal document (UN/SCEGHS/15/INF.41) reporting about that meeting was submitted to the GHS Sub-Committee just after the meeting of the informal working group.
2. The purpose of this document is to inform the TDG Sub-Committee about the work of the informal working group and to keep the subject in the program of work for the next biennium.

**Outcome of the meeting**

3. The working group agreed that the test method described in UN/SCEGHS/13/INF.5 and UN/SCEGHS/14/INF.19 is “in principle” suitable for the purposes of testing chemically unstable gases. A few modifications regarding the necessary ignition energy in the first test at ambient conditions and regarding the location of the ignition source in the test vessel were deemed to be necessary and will be included.
4. The working group agreed not to propose to create a new hazard class but to include additional categories for chemically unstable gases in the hazard class of flammable gases

(because most chemically unstable gases are flammable gases as well). Sectors that implement the GHS, such as the transport of dangerous goods, could choose not to implement these GHS-categories, by making use of the building block approach.

5. A draft of such a proposal is included in the Annex to this document for information. This draft is slightly revised compared to the draft submitted for the July session in order to consider comments that were received in the meantime.

### **Future work**

6. Further work is needed to fix concentration limits below which mixtures containing chemically unstable gases can be assumed to be chemically stable.

7. The group has not yet a concrete proposal where to incorporate the agreed test method for testing gases as chemically unstable but will work on it and intends to come back with a concrete proposal in the next biennium.

**Annex**

**Proposal for inclusion into hazard class of flammable gases**

Amend section 2.2.2 and 2.2.3 of the UN-GHS as follows (proposed amendments are underlined and in red):

**2.2.1 Definitions**

2.2.1.1 A *flammable gas* is a gas having a flammable range with air at 20 °C and a standard pressure of 101.3 kPa.

2.2.1.2 Some flammable gases in addition may be chemically unstable gases and may react explosively without any amount of air or oxygen

**2.2.2 Classification criteria**

2.2.2.1 A flammable gas is classified in one of the two categories for this class according to the following table:

**Table 2.2.1: Criteria for flammable gases**

<b>Category</b>	<b>Criteria</b>
<b>1</b>	Gases, which at 20 °C and a standard pressure of 101.3 kPa: (a) are ignitable when in a mixture of 13% or less by volume in air; or (b) have a flammable range with air of at least 12 percentage points regardless of the lower flammable limit.
<b>2</b>	Gases, other than those of Category 1, which, at 20 °C and a standard pressure of 101.3 kPa, have a flammable range while mixed in air.

*NOTE 1: Ammonia and methyl bromide may be regarded as special cases for some regulatory purposes.*

*NOTE 2: For the classification of aerosols, see Chapter 2.3.*

2.2.2.2 A chemically unstable flammable gas is additionally classified in one of the two categories for chemically unstable gases according to the following table:

**Table 2.2.2: Criteria for chemically unstable gasses**

<b><u>Additional category of chemically unstable gas</u></b>	<b><u>Criteria</u></b>
<u>1</u>	<u>Gases which are chemically unstable at ambient conditions</u>
<u>2</u>	<u>Gases which are chemically unstable at 65 °C and the corresponding pressure</u>

### 2.2.3 Hazard communication

General and specific considerations concerning labelling requirements are provided in *Hazard communication: Labelling* (Chapter 1.4). Annex 2 contains summary tables about classification and labelling. Annex 3 contains examples of precautionary statements and pictograms which can be used where allowed by the competent authority.

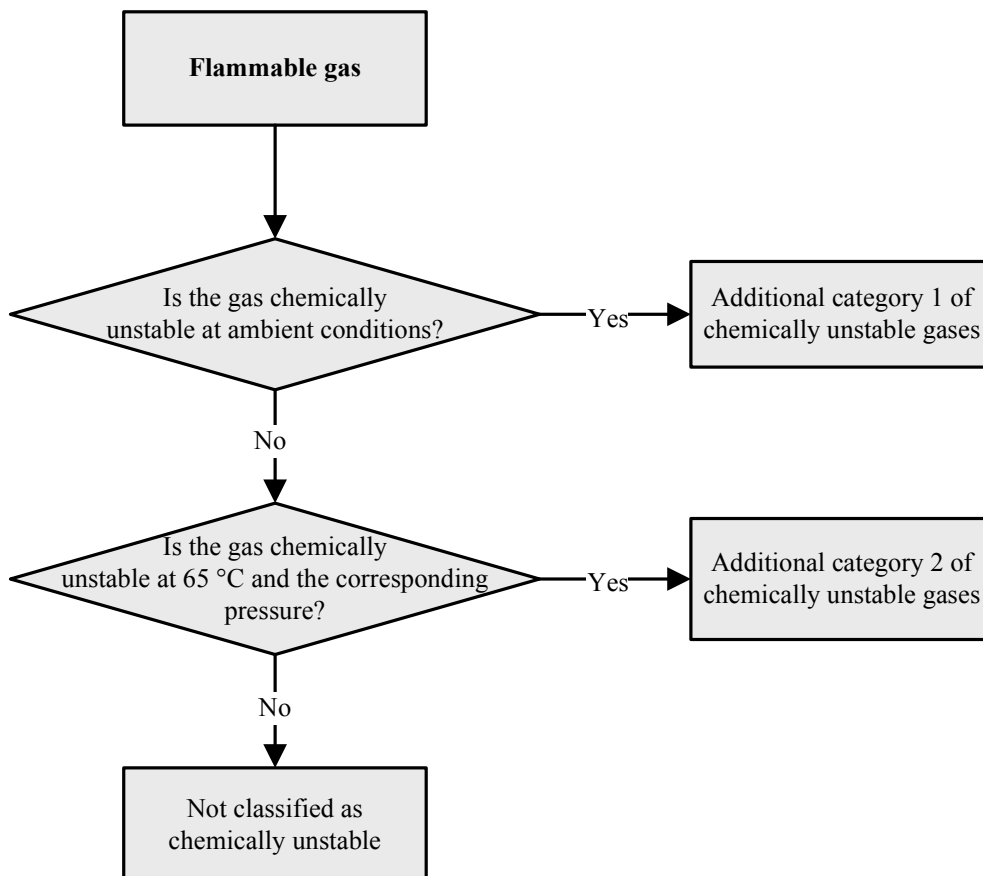
**Table 2.2.3: Label elements for flammable gases (including chemically unstable gases)**

	<u>Flammable gas</u>		<u>Chemically unstable gas</u>	
	<u>Category 1</u>	<u>Category 2</u>	<u>Additional category 1</u>	<u>Additional category 2</u>
<b>Symbol</b>	Flame	<i>No symbol</i>	<i><u>No symbol</u></i>	<i><u>No symbol</u></i>
<b>Signal word</b>	Danger	Warning	<i><u>No signal word</u></i>	<i><u>No signal word</u></i>
<b>Hazard statement</b>	Extremely flammable gas	Flammable gas	<i><u>May decompose explosively at ambient conditions</u></i>	<i><u>May decompose explosively at elevated conditions</u></i>

### Consequential changes to the decision logic and guidance

Section 2.2.4 "decision logic and guidance should be amended by an appropriate decision logic and by reference to the agreed test method. The decision logic to be added in a new section after section 2.2.4.1 could be as follows:

**Proposal for additional decision logic 2.2.2 for flammable gases which are chemically unstable**



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