

**Committee of Experts on the Transport of Dangerous Goods
and on the Globally Harmonized System of Classification
and Labelling of Chemicals**

30 June 2023

**Sub-Committee of Experts on the
Transport of Dangerous Goods**

Sixty-second session

Geneva, 3-7 July 2023

Item 10 (c) of the provisional agenda

**Issues relating to the Globally Harmonized System
of Classification and Labelling of Chemicals:**

Miscellaneous

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

Forty-fourth session

Geneva, 10-12 July 2020

Item 2 (k) of the provisional agenda

**Work on the Globally Harmonized System of
Classification and Labelling of Chemicals: other
matters**

**Proposal to add hazard communication requirements for
substances or mixtures emitting volatile and flammable
vapours in annex 4 of the GHS (Guidance on the preparation
of Safety Data Sheets (SDS))”**

Submitted by the expert from China

Introduction

1. In the current version of the GHS, there are no hazard communication requirements for substances or mixtures that can emit volatile and flammable vapours but do not themselves meet any physical hazard classification criteria (e.g. Expandable polystyrene and plastic moulding materials in dough form containing foaming agents which are classified as UN2211 and UN3314 in the Transport of Dangerous Goods).

2. Substances or mixtures capable of evolving flammable/explosive vapours present the potential hazard of flammability during their storage, handling and processing: A fire can arise with the accumulation of evolved flammable vapours and a potential ignition source (including electrical equipment, electrostatic discharge, hot working such as grinding and welding, etc.). However, under the current version of the GHS, some of these substances/mixtures cannot be classified into any physical hazard classes. They are not liquids and therefore cannot be classified as flammable liquid Category 1-4 based on the results of the closed cup flash point test. And, the results of the solid burning rate test may also fail to meet the classification criteria for flammable solid Category 1-2. For instance, expandable polystyrene and plastic moulding in dough form containing foaming agents may not meet the classification criteria for flammable liquids and flammable solids, or cannot even be ignited by an open flame. TDG classifies them as Class 9 dangerous goods (UN2211 and UN3314) because of the flammability risk associated with their properties to emit volatile and flammable vapour during transport. But, they fail to meet the classification criteria for any physical hazard class in GHS.

3. In addition, Annex II to CLP requires additional hazard information statements ‘EUH018 — *In use, may form flammable/explosive vapour-air mixture*’ on the label and packaging for substances and mixtures that are not classified as flammable themselves, but may form flammable/explosive vapour-air mixtures. In the opinion of the expert from China, although these substances cannot be classified according to the GHS Part 2 physical hazard determination method, it is necessary to make the relevant hazard communication in SDS in view of the potential loss of life, property damage and environmental hazards in the event of an accident.

4. For the hazardous properties of substances or mixtures such as expandable polystyrene and plastic moulding in dough form evolving flammable/explosive vapours, it is recommended to amend paragraphs A4.3.2.3, A4.3.9 (table A4.3.9.1) and A4.3.10.3 in GHS Annex 4 as shown in paragraphs 5 to 7 below.

Proposal

5. Amend paragraph A4.3.2.3 as follows (new text is shown in **bold underlined**):

“A4.3.2.3 *Other hazards which do not result in classification*

Provide information on other hazards which do not result in classification but may contribute to the overall hazards of the material, for example, formation of air contaminants during hardening or processing, **may form flammable/explosive vapour-air mixture**, dust explosion hazards, suffocation, freezing or environmental effects such as hazards to soil-dwelling organisms. To communicate combustible dust hazards, and thus a potential risk of dust explosions under the approach described in annex 11 in a standardized manner, competent authorities may allow the use of the phrases identified in A11.2.7.3 on labels, SDSs and/or in operating instructions or may leave the choice to the manufacturer or supplier.”

6. In A4.3.9, table A4.3.9.1, for “Flammability” insert the following new third bullet in the column “Remarks/Guidance” as follows (new text is shown in **bold underlined**):

“ - if available and appropriate, further information may be indicated in addition, e.g.

- whether the effect of ignition is other than a normal combustion (e.g., an explosion)
- ignitability under non-standard conditions
- **whether the substance or mixture can evolve flammable/explosive vapour**”

7. Amend paragraph A4.3.10.3 as follows (new text is shown in **bold underlined**):

“A4.3.10.3 *Possibility of hazardous reactions*

If relevant, state if the substance or mixture will react or polymerize, releasing excess pressure or heat, **evolving flammable/explosive vapour (see A4.3.2.3)**, or creating other hazardous conditions. Describe under what conditions the hazardous reactions may occur.”
