



**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****Fiftieth session**

Geneva, 28 November–6 December 2016

Item 7 (i) 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****Thirty-second session**

Geneva, 7–9 December 2016

Item 2 (b) of the provisional agenda

**Classification criteria and related hazard communication:
work of the TDG Sub-Committee on matters of interest to
the GHS Sub-Committee****Corrections to the classification of flammable liquids****Transmitted by the expert from Germany¹**

1. In the course of going through the revision of the Manual of Tests and Criteria for taking into account the GHS, as proposed in informal documents INF.3 (GHS, thirty-first session), INF.4 (TDG, forty-ninth session) and their addenda submitted at the last session of both sub-committees, the expert from Germany spotted some inconsistencies which are contained in the GHS and (as advised by the chairman of the Working Group on Explosives) therefore should be corrected there in the first place.

2. In the GHS paragraph 2.6.4.2.2, reference is made to the relevant flashpoint classification criteria for flammable liquids (23 °C and 60 °C). The third relevant flashpoint classification criterion, which is 93 °C, is not named (apparently because this text once was taken over from the Manual of Tests and Criteria without having been adapted in order to take into account also category 4). However, when using the calculation method, the same principle (i.e. a safety margin of 5 °C) should apply when deciding whether a liquid is classified as category 4 or not classified as flammable based on calculation.

3. An equivalent inconsistency where flammable liquids of category 4 are not considered appropriately in the GHS is contained in Note 2 of section 2.6.2. Based on this Note, flammable liquids with a flash point above 35 °C and up to 60 °C may be exempted

¹ In accordance with the programme of work of the Sub-Committee for 2015–2016 approved by the Committee at its seventh session (see ST/SG/AC.10/C.3/92, paragraph 95 and ST/SG/AC.10/42, para. 15).

based on the sustained combustibility test L.2. However, before exempting them, they should be "moved one category up" for the purposes of the GHS. This of course would mean that they are exempted for sectors which have not implemented category 4 (e.g. transport).

4. Furthermore, Note 2 of section 2.6.2 of the GHS applies only to flammable liquids of category 3 (having a flash point above 35 °C). There is no possibility to exempt flammable liquids of category 4 in a similar way, although this should apply all the more to flammable liquids with an even higher flash point, i.e. liquids with a flash point above 60 °C. This results also in an inconsistency with regard to the application of the equivalent footnote 2 in the flow-chart in 2.6.4.1 where footnote 2 is contained in the arrow leading to category 4 although the text of that footnote actually does not apply to flammable liquids of category 4.

5. The test temperatures of test L.2 as currently given in the Manual of Tests and Criteria amount to 60.5 °C and 75 °C (see 32.5.2.3.2). They are chosen such that they are applicable to liquids with a flash point up to 60 °C. In order to be applicable to flammable liquids of category 4, equivalently higher test temperatures must be introduced. It is therefore proposed to add test temperatures of 93 °C (the respective limiting criterion) and 108 °C which are to be applied when subjecting flammable liquids of category 4 to test L.2.

6. Proposals to rectify these points are given in the annexes to this document. The sub-committees are invited to consider these amendments.

Annex I

Proposed amendments to the GHS

Amendments are shown as follows: Additions are underlined, deletions are ~~in strikethrough~~.

Amend the introductory sentence of 2.6.4.2.2 to read as follows (for explanation, see paragraph 2 in the main text of this document):

"2.6.4.2.2 In the case of mixtures ³ containing known flammable liquids in defined concentrations, although they may contain non-volatile ingredients e.g. polymers, additives, the flash point need not be determined experimentally if the calculated flash point of the mixture, using the method given in 2.6.4.2.3 below, is at least 5 °C ⁴ greater than the relevant classification criterion (~~23 °C and 60 °C, respectively~~) and provided that:"

Amend Note 2 in section 2.6.2 to read as follows (for explanation, see paragraphs 3 and 4 in the main text of this document):

"**NOTE 2:** Liquids with a flash point of more than 35 °C and ~~not more than less than or equal to 60 °C~~ may be regarded as flammable liquids of category 4 ~~non-flammable liquids~~ for some regulatory purposes (~~e.g. transport~~) if negative results have been obtained in the sustained combustibility test L.2 of Part III, section 32 of the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria. In case flammable liquids of category 4 are not part of the regulation (e.g. transport) they may be regarded as non-flammable liquids in that case. Liquids with a flash point of more than 60 °C and less than or equal to 93 °C may be regarded as non-flammable liquids for some regulatory purposes if negative results have been obtained in the sustained combustibility test L.2 of Part III, section 32 of the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria."

Replace the text of Footnote 2 (belonging to the arrow leading to category 4) in 2.6.4.1 by the following text (for explanation, see paragraphs 3 and 4 in the main text of this document):

² Liquids with a flash point of more than 60 °C and less than or equal to 93 °C may be regarded as non-flammable liquids for some regulatory purposes if negative results have been obtained in the sustained combustibility test L.2 of Part III, section 32 of the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria.

Replace the "2" in the arrow leading to category 3 by a "3" and add a new footnote with the following text (for explanation, see paragraphs 3 and 4 in the main text of this document):

³ Liquids with a flash point of more than 35 °C and less than or equal to 60 °C may be regarded as flammable liquids of category 4 for some regulatory purposes if negative results have been obtained in the sustained combustibility test L.2 of Part III, section 32 of the UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria. In case flammable liquids of category 4 are not part of the regulation (e.g. transport) they may be regarded as non-flammable liquids in that case.

Annex II

Proposed consequential amendments to the Manual of Tests and Criteria

Amendments are shown as follows: Additions are underlined, deletions are ~~in strikethrough~~.

Amend the introductory sentence of paragraph 4.1 of Appendix 6 to read as follows (for explanation see paragraph 2 in the main text of this document):

"4.1 The procedure only applies to possible flammable mixtures ¹ containing known flammable liquids in defined concentrations although they may contain non-volatile components e.g. polymers, additives etc. The flash point of these mixtures need not be determined experimentally if the calculated flash point of the mixture, using the method given in 4.2, is at least 5 °C ² greater than the relevant classification criterion (~~23 °C and 60 °C, respectively~~) and provided that: "

In 32.5.2 (for explanation, see paragraph 5 in the main text of this document):

(a) Amend the second sentence of 32.5.2.3.2 to read:

"The test temperature is 60.5 °C or 75 °C (for liquids with a flash point of more than 35 °C and less than or equal to 60 °C) or 93 °C or 108 °C (for liquids with a flash point of more than 60 °C and less than or equal to 93 °C) (see 32.5.2.3.8).";

(b) Amend 32.5.2.3.8 to read:

"32.5.2.3.8 If sustained combustion, interpreted in accordance with 32.5.2.4 is not found at the lower applicable test temperature according to 32.5.2.3.2 ~~a test temperature of 60.5 °C~~, repeat the complete procedure with new test portions, but at the higher applicable test temperature according to 32.5.2.3.2 ~~a test temperature of 75 °C~~".
