

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

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

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Item 10 (h) 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**

Thirtieth session

Geneva, 9-11 December 2015
Item 2 of the provisional agenda
**Joint work with the Sub-Committee of Experts on the
Transport of Dangerous Goods (TDG Sub-Committee)**

**Use of the Manual of Tests and Criteria in the context of the
GHS: Proposed amendments to Chapter 32 of Part III of the
Manual**

Transmitted by the expert from Canada

1. Reference is made to document UN/SCETDG/45/INF.8/Add.4-UN/SCEGHS/27/INF.5/Add.4 from the 45th and to documents UN/SCETDG/47/INF.6-UN/SCEGHS/29/INF.4 and UN/SCETDG/47/INF.31-UN/SCEGHS/29/INF.9 from the 47th sessions of the Sub-Committee.
2. This document contains specific comments on the suggested amendments to Section 32 of Part III of the Manual of Tests and Criteria.
3. As highlighted in paragraph 4 of INF.31 (47th session), any reference to both the Model Regulations and GHS should always place the Model Regulations before the GHS for consistency purposes. In the introduction to the Manual, the Model Regulations are presented first and this should be maintained throughout. Constant references to “transport” classes and “GHS” categories are unnecessary and should be deleted.
4. The goal of Chapter 32 is to determine whether liquid desensitized explosives and other liquids meet the criteria for flammability. It is suggested not to amend the title of this chapter, except to remove the reference to “transport class 3”. It is proposed to incorporate the references to the UN Model Regulations and the GHS into 32.1.1 as follows:

32.1 Purpose

32.1.1 This ~~chapter section~~ presents the United Nations scheme for the classification of liquid desensitized explosives and flammable liquids (Class 3 / Categories 1 to 4). The text should be used in conjunction with the classification principles given in Chapter 2.3 of the Model Regulations, Chapter 2.3 of the GHS, and the tests methods given in sections 32.4 and 32.5 of this Manual. Note 2 to paragraph 2.1.2.2 of the GHS should also be taken into consideration.

5. For consistency, it is proposed to add the words “and mixtures” a second time in the first sentence to 32.2.2 as follows and to adopt all other changes proposed in INF.8/Add.4 (45th session):

32.2.2 Substances and mixtures are classified as flammable liquids only when their flash point is not more than 60 °C in a closed-cup test, or not more than 65.6 °C in an open-cup test or, in the case of substances and mixtures transported or offered for transport at elevated temperatures, when they give off a flammable vapour at a temperature at or below the maximum transport temperature. (...)

6. It is proposed to remove the parenthesis for the reference to the Model Regulations in 32.2.3 as well as the reference to class 3 and to amend the rest of the paragraph as follows. The expert from Canada does not believe it necessary to add the GHS categories in this instance as it is only an example.

32.2.3 Flammable liquids listed ~~by name in the dangerous goods list (of Chapter 3.2 of the Model Regulations) in transport Class 3~~ should be regarded as chemically pure. In practice, goods shipped under the name of such substances are often commercial products which contain other added substances or impurities. Therefore, it may occur that liquids which are not included in the list because their flash point in their pure state is more than 60 °C in a closed-cup test, or more than 65.6 °C in an open-cup test, may be ~~classified offered for transport as~~ “generic” or “not otherwise specified” ~~dangerous goods commercial products~~ with a flash point at or below that limit. Moreover, liquids which would be listed, in their pure state, in packing group III (~~GHS Category 3~~) could in fact be included in packing group II (~~GHS Category 2~~) when offered as commercial products because of the presence of added substances or impurities.

7. It is proposed to amend 32.2.5 so that the results of the combustibility test are hinted at.

32.2.5 Liquids are considered to be unable to sustain combustion (i.e. they do not sustain combustion under defined test conditions) if they ~~have passed~~ yield negative results when submitted to a suitable combustibility test (see section 32.5.2) or if their fire point, according to ISO 2592, is greater than 100 °C or if they are miscible solutions with a water content of more than 90% by mass.

8. The Secretariat and the expert from the Netherlands mentioned that the GHS does not use the boiling point (BP) as criteria for classification of Category 3 flammable liquids. Since the 6th edition of the GHS does not address boiling point, it is proposed that the GHS be amended accordingly so that the criteria for packing groups I, II and III match the ones for Categories 1, 2 and 3 better. Until GHS is amended, a note could be added after this table (proposed in INF.8/Add.4) to mention the difference. Also, as mentioned before, it is suggested to “switch” the last two columns as follows.

Table 32.1: Hazard grouping based on flammability

Criteria	UN Model Regulations Packing group	GHS Category
Flash point < 23 °C and initial boiling point ≤ 35 °C	I	1
Flash point < 23 °C and initial boiling point > 35 °C	II	2
Flash point ≥ 23 °C and ≤ 60 °C and initial boiling point > 35 °C	III	3
Flash point > 60 °C and ≤ 93 °C	<i>Not applicable</i>	4

9. Regarding *liquid desensitized explosives*, 32.3.2 is pertinent only for the Model Regulations and should be stated as such. It is recommended to make the following change to 32.3.2.1, 32.3.2.2 and 32.3.2.3; thus the note proposed in “comment RG11” of INF.8/Add.4 would not be required. It is suggested that 32.3.2.3 be discussed by the Sub-Committee for further “simplification” as well.

32.3.2.1 This sub-section presents the Model Regulations United Nations scheme for the classification of liquid desensitized explosives as flammable liquids of (transport Class 3) (see Chapter 2.1, note 2 to paragraph 2.1.1.1 and Chapter 2.3, paragraph 2.3.1.4 of the Model Regulations and Chapter 2.1, note 2 to paragraph 2.1.1.1 of the GHS). Liquid desensitized explosives are substances or mixtures which are dissolved or suspended in water or other liquid substances to form a homogeneous liquid mixture in order to suppress their explosives properties.

32.3.2.2 New products which are thermally stable and have, or are suspected of having, explosive properties should first be considered for classification as inclusion in the class of explosives of (transport Class 1) and the Class 1 acceptance procedure in this class, and, if necessary, the assignment procedure should be applied.

32.3.2.3 Where a substance or mixture is meets the criteria for classification as an assigned to the class of explosives of (transport Class 1) but is diluted to be exempted from this class Class 1 by test series 6 (see section 16), this diluted substance or mixture (i.e. the desensitized explosive), when meeting the classification criteria or definition for another class (or transport division), should be classified in that class (or transport division) at the highest concentration which exempts it from the class of explosives (transport Class 1). When sufficiently diluted, such substances or mixtures may be deemed to be non-dangerous (see also paragraph 2.1.3.6.3 of the Model Regulations).

32.3.2.4 (...)

10. It is proposed to modify the titles of 34.4.1 and 32.4.2 and to add a reference to the assignment of packing groups in the Model Regulations to 32.4.2.2:

32.4.1 Tests for non-viscous flammable liquids

(...)

32.4.2 Tests for viscous flammable liquids with a flash point of less than 23 °C

(...)

32.4.2.1 The hazard group of paints, enamels, lacquers, varnishes, adhesives, polishes and other viscous flammable liquids substances or mixtures (of transport Class 3) with a flash point of less than 23 °C is determined as per sub-section 2.3.2.2 of the Model Regulations by reference to:

11. References to 32.3.1.6 and 32.3.1.7 in 32.5.1.4 should be removed since these sections have been deleted (see Amendment 2 to 5th edition of the Manual). Use reference for sections 2.3.2.2 and 2.3.2.5 instead. Reference to the GHS unnecessary as viscosity is not mentioned as a criteria in the GHS. Also, the text should be changed to the following:

32.5.1.4 *Test criteria and method of assessing results*

The height of the upper separated layer should be expressed as a percentage of the total height of the sample. If less than 3% of clear solvent separates out then the substance may be considered for inclusion in packing group III (see 2.3.2.2 of the

Model Regulations) or may not be subject to the Model Regulations (see 2.3.2.5 of the Model Regulations). (GHS Category 3) (see 32.3.1.6 and 32.3.1.7).

12. Lastly, it is suggested to simplify 32.5.2.2.1, so that figure 32.5.2.1 is only mentioned once.

32.5.2.2.1 A combustibility tester is used consisting of a block of aluminium alloy or other corrosion resistant metal of high thermal conductivity. The block has a concave well and a pocket drilled to take a thermometer. A small gas jet assembly on a swivel is attached to the block. The handle and gas inlet for the gas jet may be fitted at any convenient angle to the gas jet. ~~A suitable apparatus is shown in Figure 32.5.2.1 and the e~~ Essential diagrams for a suitable apparatus are given in figures 32.5.2.1 and 32.5.2.2. The following apparatus is also required:
