



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**

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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-second session

Geneva, 6-8 July 2022

Item 2 (i) of the provisional agenda

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

Amendment of the Manual of Tests and Criteria to appropriately reflect the Globally Harmonized System of Classification and Labelling of Chemicals

**Transmitted by the experts from Germany and the chair of the
Working Group on Explosives***

Introduction

1. The Manual of Tests and Criteria serves the Recommendations on the Transport of Dangerous Goods, Model Regulations, as well as the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) by describing (most of) the test methods for physical hazards referenced therein. As the GHS was established much later than the Model Regulations and the Manual of Tests and Criteria, the Manual was written specifically for the transport sector. Explicit consideration of the GHS in the Manual was introduced in Revision 7 of the Manual in 2019. It was a tedious work, mainly due to the sheer number of changes that were necessary, be it specific references to transport that had to be amended, different principles of the GHS that had to be explained or simply adaptations of the terminology. Having that in mind, it does not surprise that there might be a few places where some necessary amendments have been overlooked and needed correction.

2. In the course of the work of the informal working on combinations of physical hazards, the experts from Germany and the Netherlands went through the Manual to identify (all) references in the Manual to worker protection/safety of testing personnel. In doing that, two places were found where such amendments are still necessary to correctly reflect the GHS in the Manual.

3. The Sub-Committees are invited to consider the corresponding two proposals, which are presented in the following as proposal 1 on “corrosive to metals” (a minor correction) and proposal 2 on flammable liquids.

* A/75/6 (Sect.20), para. 20.51

Proposal 1 on “corrosive to metals”

4. In section 37.1.2 the last sentence reads: “If a substance is shown to be corrosive to skin, then it is not necessary to conduct the tests for metal corrosion for the purposes of classification”. Such a precedence does not exist in the GHS. Even when a substance/mixture is already classified as corrosive to skin, the GHS has no waiving of classification for “corrosive to metals”.

5. Consequently, it is proposed to amend the sentence in 37.1.2 of the Manual of Tests and Criteria as follows (next text is bold underlined):

“If a substance is shown to be corrosive to skin, then it is not necessary to conduct the tests for metal corrosion for the purposes of **transport**-classification.”

Proposal 2 on “flammable liquids”

6. The first sentence in section 32.2.2 of the Manual of Tests and Criteria reads “Substances 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 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”. However, according to the GHS, the hazard class “Flammable liquids” covers liquids with a flash point ≤ 93 °C.

7. As the reference to 60 °C cannot simply be replaced by a reference to 93 °C because: (i) that is not correct for transport and (ii) the remainder of that sentence would become meaningless; therefore, it is proposed to slightly restructure that section.

8. The approach is as follows: The general criterion is mentioned first. This is followed by the exemption for liquids not sustaining combustion because it is contained in the Model Regulations as well as in the GHS. And after that, the specifications for the transport are given; they concern the building block approach (no implementation of Category 4) and liquids transported at elevated temperatures.

9. Based on the above considerations, it is proposed to amend section 32.2 of the Manual of Tests and Criteria as follows (next text is bold underlined, deleted text in strikethrough):

32.2 Scope

...

32.2.2 Substances are classified as flammable liquids only when their flash point is not more than **93 °C**, ~~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 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.~~ However, liquids with a flash point of more than 35 °C and not more than 60 °C may be regarded as non-flammable for some regulatory purposes (e.g. transport) if they do not sustain combustion (i.e. negative results have been obtained in the sustainability test L.2 in subsection 32.5.2 of this Manual). **For the purposes of transport, the following specifications apply in addition:**

- (a) **Substances are classified as flammable liquids only when their flash point is not more than 60 °C (flammable liquids Category 4 of the GHS is not implemented);**
- (b) **Additionally, substances transported or offered for transport at elevated temperatures, are classified as flammable liquids when they give off a flammable vapour at a temperature at or below the maximum transport temperature.**

10. With the removal of the second part of the first sentence in section 32.2.2, the reference to the different flash point (criterion) for open-cup tests is also removed. But as the headline of section 32.2 is “Scope”, and such specifics relating to a test method (here to a

“safety-margin” to be applied when using an open-cup test method) are not about the scope, they should be moved to a more appropriate section anyway. Therefore, it is proposed to remove also an equivalent reference to the open-cup test method from the third sentence of section 32.2.3 – as shown below – and to take up that information on test methods in section 32.4 of the Manual of Tests and Criteria:

“32.2.3 ... 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 as "generic" or "not otherwise specified" flammable liquids with a flash point at or below that limit. ...”

11. As justified in paragraph 10 above, it is proposed to include information on test methods into section 32.4. Here, we would like to propose two options as follows:

- Option 1 (preferred by the experts from Germany and the Netherlands): This option would mean a change on contents by generally recommending the closed-cup test method. We think that is appropriate for the following reasons: The exact origin of the 65.6 °C value for open-cup methods is not known to us. Generally, open-cup tests deliver approximately 5 °C to 10 °C higher values than closed-cup tests. For safety reasons, our experts therefore recommend using closed-cup tests. There are only a few cases where the use of open-cup tests would make sense. This concerns highly viscous substances with high boiling points (asphalt, bitumen, tar), which can hardly be measured in closed-cup devices. However, these are not relevant for classification purposes because the flash points of such substances are above 100 °C anyway.
- Option 2: Add the safety margin also for open-cup test methods. Compared to the current text in the Manual, this would not change the contents.

12. It is proposed to amend section 32.4 of the Manual of Tests and Criteria by adding text just below the headline (and above the headline of section 32.4.1) as shown below. Option 1 corresponds to adding the first sentence only. Option 2 corresponds to adding the first sentence as well as the second sentence (which is in shown in square brackets).

“32.4 Test methods used for determining flash point and viscosity
It is strongly recommended to use only closed-cup tests for the determination of the flash point. [However, if open-cup tests are used, at least 5 °C have to be added to the relevant criterion because open cup test methods generally result in higher flash point values.]
32.4.1 ...”