



**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 Globally Harmonized
System of Classification and Labelling of Chemicals****Thirty-fifth session**

Geneva, 4-6 July 2018

Item 3 (h) of the provisional agenda

**Classification criteria and related hazard communication:
other issues****Proposed amendments to chapter 2.3 to convert decision
logics into text language****Transmitted by the expert from Canada and the European Aerosol
Federation (FEA)***

1. At the thirty-third session of the Sub-Committee, the European Chemical Industry Council (CEFIC) and the European Industrial Gases Association (EIGA) submitted informal document INF.12: "Proposal for a new classification for chemicals under pressure". This document proposed that aerosols and chemicals under pressure could be combined and addressed in the same chapter (2.3) of the GHS, which currently addresses aerosols.
2. Paragraph 8 of informal document INF.12 highlighted the importance of the decision logic flow charts presented in sections 2.3.1.4.1 and 2.3.2.4.1 of informal document INF.12. For aerosols and chemicals under pressure, it was suggested that the decision logic flow charts are required to determine the appropriate classification of a chemical, as the decision criteria are not completely described in the "Classification criteria" section. It was proposed that the words "are not part of the harmonized classification system", in reference to the decision logics, be deleted from sections 2.3.1.4 and 2.3.2.4 of informal document INF.12 to emphasize the significance of the decision logic flow charts in clarifying the decision process.
3. During the discussion of informal document INF.12 at the thirty-third session of the Sub-Committee, the expert from Canada informed the Sub-Committee that, in the Canadian

* In accordance with the programme of work of the Sub-Committee for 2017–2018 approved by the Committee at its eighth session (see ST/SG/AC.10/C.3/100, para. 98 and ST/SG/AC.10/44, para. 14).

Hazardous Products Regulations, no GHS decision logic flow charts were incorporated. It is not possible to include diagrams or flow charts in Canadian legislation and regulations.

4. Therefore, for hazard classes where the decision logics included information that was not completely described in the “Classification criteria” section of the same GHS chapter, the information presented in the decision logics was incorporated in the *Hazardous Products Regulations* using words. For example, in the case of the Flammable Aerosols hazard class, the information presented in the decision logics for Flammable Aerosols in section 2.3.4.1 of the GHS (rev. 3) was converted into text language.

5. At the thirty-fourth session of the Sub-Committee, the expert from Canada submitted informal document INF.13: “Clarification on procedure by which the GHS (rev. 3) decision logics for flammable aerosols were converted to text language for the Canadian *Hazardous Products Regulations*”. The Sub-Committee noted that for most of the hazard classes, the decision logics were not part of the criteria. The Sub-Committee agreed that, in principle, criteria should be expressed in words in order to allow consistent implementation in different jurisdictions.

6. At the thirty-fourth session of the Sub-Committee, the representatives of CEFIC and EIGA submitted informal document INF.15: “Proposal for a new classification of chemicals under pressure within chapter 2.3”, an updated version of the informal document INF.12 that had been submitted during the thirty-third session.

7. The expert from Canada and the representatives of CEFIC and EIGA were invited, for the thirty-fifth session of the Sub-Committee, to present proposed criteria for aerosols, following the approach of converting decision logics into text language, either in a separate working document or as part of the revision of chapter 2.3 to include chemicals under pressure.

8. A working document that presents a proposal for a manner by which the criteria for aerosols could be expressed in words is hereby submitted, separately from the proposal by CEFIC and EIGA regarding a new classification of chemicals under pressure within chapter 2.3. This working document was prepared by the expert from Canada in collaboration with FEA.

9. The proposed amendments to Chapter 2.3 to present the criteria for aerosols in text language are outlined in the Annex to this document. The Sub-Committee is invited to consider these amendments.

Annex

Proposed amendments to the GHS to present the criteria for aerosols in text language

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

1. Amend section 2.3.2 to read as follows:

“2.3.2 Classification criteria

2.3.2.1 Aerosols are classified in one of the three categories of this hazard class, according to Table 2.3.1, depending on:

- their flammable properties, ~~and~~
- their heat of combustion, and;
- if applicable, test results from the ignition distance test, the enclosed space ignition test and the aerosol foam flammability test, performed in accordance with sub-sections 31.4, 31.5 and 31.6 of the *UN Recommendations on the Transport of Dangerous Goods, Manual of Tests and Criteria*.

They should be considered for classification in Category 1 or 2 if they contain more than 1% components (by mass) which are classified as flammable according to the GHS criteria, i.e.:

- Flammable gases (see Chapter 2.2);
- Flammable liquids (see Chapter 2.6);
- Flammable solids (see Chapter 2.7);

or if their heat of combustion is at least 20 kJ/g.

Table 2.3.1: Criteria for aerosols

<u>Category</u>	<u>Criteria</u>
<u>1</u>	<p><u>Any aerosol that contains at least 85% flammable components (by mass) and has a heat of combustion of at least 30 kJ/g; or</u></p> <p><u>Any aerosol that dispenses a spray that, in the ignition distance test, has an ignition distance of at least 75 cm; or</u></p> <p><u>Any aerosol that dispenses a foam that, in the foam flammability test, has</u></p> <ul style="list-style-type: none"> a) <u>a flame height of at least 20 cm and a flame duration of at least 2 s, or</u> b) <u>a flame height of at least 4 cm and a flame duration of at least 7 s</u>
<u>2</u>	<p><u>Any aerosol that dispenses a spray that, based on the results of the ignition distance test, does not meet the criteria for Category 1, and which has</u></p> <ul style="list-style-type: none"> a) <u>a heat of combustion of at least 20 kJ/g, or</u>

Category	Criteria
	b) <u>a heat of combustion of less than 20 kJ/g along with an ignition distance of at least 15 cm, or</u> c) <u>a heat of combustion of less than 20 kJ/g and an ignition distance of less than 15 cm along with either, in the enclosed space ignition test,</u> <ul style="list-style-type: none"> ○ <u>a time equivalent of 300 s/m³ or less, or</u> ○ <u>a deflagration density of 300 g/m³ or less; or</u> <u>Any aerosol that dispenses a foam that, based on the results of the aerosol foam flammability test, does not meet the criteria for Category 1, and which has a flame height of at least 4 cm and a flame duration of at least 2 s.</u>
<u>3</u>	<u>Any aerosol that contains 1% or less flammable components (by mass) and that has a heat of combustion below 20 kJ/g; or</u> <u>Any aerosol that contains more than 1% (by mass) flammable components or which has a heat of combustion of at least 20 kJ/g but which, based on the results of the ignition distance test, the enclosed space ignition test or the aerosol foam flammability test, does not meet the criteria for Category 1 or Category 2.</u>

NOTE 1: *Flammable components do not cover pyrophoric, self-heating or water-reactive substances and mixtures because such components are never used as aerosol contents.*

NOTE 2: *Aerosols do not fall additionally within the scope of chapters 2.2 (flammable gases), 2.5 (gases under pressure), 2.6 (flammable liquids) and 2.7 (flammable solids). Depending on their contents, aerosols may however fall within the scope of other hazard classes, including their labelling elements.*

~~2.3.2.2~~ ~~— An aerosol is classified in one of the three categories for this Class on the basis of its components, of its chemical heat of combustion and, if applicable, of the results of the foam test (for foam aerosols) and of the ignition distance test and enclosed space test (for spray aerosols). See decision logic in 2.3.4.1. Aerosols which do not meet the criteria for inclusion in Category 1 or Category 2 (extremely flammable or flammable aerosols) should be classified in Category 3 (non flammable aerosols).~~

NOTE 3: *Aerosols containing more than 1% flammable components or with a heat of combustion of at least 20 kJ/g, which are not submitted to the flammability classification procedures in this chapter should be classified as aerosols, Category 1.*

2. Amend the title of Table 2.3.1: Label elements for aerosols, to read as follows:

Table 2.3.12: Label elements for aerosols