

## **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**

**6 December 2022**

### **Forty-third session**

Geneva, 7-9 December 2022

Item 3 (i) of the provisional agenda

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

## **Classification and hazard communication of hydrofluorocarbons addressed in Annex F of the Montreal Protocol**

**Transmitted by the European Union and the experts from Austria, the  
United Kingdom and the United States of America**

### **Introduction**

1. At forty-second session<sup>1</sup>, the Sub-Committee acknowledged the need to clarify the scope of the GHS hazard class “hazardous to the ozone layer” following the adoption and entry into force of the Kigali amendment to the Montreal Protocol.
2. It was noted that the substances listed in Annex F to the Montreal Protocol had different properties than those hazardous to the ozone layer. Two alternative suggestions were put forward to address this issue, either through:
  - (a) Introducing a new Chapter 4.3 with specific criteria and hazard communication elements for greenhouse gases listed in Annex F and to limit the scope of the current hazard class in Chapter 4.2 to ozone depleting substances only, by excluding substances listed in Annex F of the Montreal Protocol; or
  - (b) Amending the current Chapter 4.2 to address “*hazardous to the upper atmosphere*”, including introducing appropriate hazard criteria and communication elements for greenhouse gases listed in Annex F of the Montreal Protocol.
3. However, there was no consensus on the proposal to address the issue by amending the current hazard statement<sup>2</sup>. It was therefore considered necessary to continue the discussion. This document provides some options for consideration and discussion of the Sub-Committee.

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<sup>1</sup> Informal document INF.14 (42<sup>nd</sup> session)- Classification and hazard communication of hydrofluorocarbons addressed in Annex F of the Montreal Protocol

<sup>2</sup> ST/SG/AC.10/C.4/84 - [Report of the Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals on its forty-second session](#)

### **Option 1: Adding new hazard statements in Chapter 4.2**

4. This option involves amending the current hazard statement to one of the following, according to the substance:

- (a) *“Harms public health and the environment by destroying ozone in the upper atmosphere”*. This statement is applicable to those substances that fall in Chapter 4.2 and that are not impacted by the Kigali Amendment<sup>3</sup>.
- (b) *“Harms public health and the environment due to its global warming potential”*. This statement would apply to those substances that are not detrimental to the ozone layer but that have been recognized as having a contribution to the global warming potential.
- (c) *“Harms public health and the environment due to its global warming potential and by destroying ozone in the upper atmosphere”*. This statement would apply to those substances that present improve hazard communication for hydrofluorocarbons (HFCs) falling within the scope of the GHS hazard class “hazardous to the ozone layer” in accordance with Annex F to the Montreal Protocol.

5. The benefit from amending the current hazard statement for substances that are classified under Chapter 4.2 “Hazardous to the ozone layer” to one of the above is that no relevant changes are needed for the GHS classification criteria. It would remain aligned with the criteria in the Montreal Protocol and its annexes, as amended or adjusted.

6. A potential downside in amending just the statements in paragraph 4 above is it may not allow for flexibility if there are further updates to the Montreal Protocol. This may eventually result in selecting risk management measures that might not be adequate.

### **Option 2: Renaming Chapter 4.2 and adding a second hazard class**

7. In this option, Chapter 4.2 would be renamed in a way that it would cover both, ozone-depleting substances (ODSs) and HFCs. For example, the new chapter title could be: “hazardous to the atmosphere system”. Within the updated chapter both substance groups would be addressed.

8. To avoid any potential shortcomings of option 1, Chapter 4.2 would be updated to contain 2 hazard classes, similar to what has already been achieved in Chapter 2.3 “Aerosols and chemicals under pressure”. One hazard class for ozone-depleting substances with the text excluding Annex F to the Montreal Protocol, and another hazard class for HFC covering Annex F to the Montreal Protocol. Separate sub-sections of the chapter are needed to articulate the definitions, criteria and hazard communication elements for the 2 hazard classes.

9. Furthermore, considering the potential that other air related hazard(s) may need to be incorporated into the chapter in the future, it may be desirable to have a new hazard class name that is broad in nature. For example, the Sub-Committee may want to consider *“hazardous to the atmospheric system”*.

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<sup>3</sup> <https://ozone.unep.org/treaties/montreal-protocol/amendments/kigali-amendment-2016-amendment-montreal-protocol-agreed>

## Further future work

10. Both option 1 and option 2 offer a simple way to adapt Chapter 4.2. to address the immediate need to align with the Kigali amendment. However, as stated above there may be the potential for future amendments of Chapter 4.2 that would be subject to later discussions.
11. A new chapter (or any other approach that the subcommittee might decide to pursue) could be developed to address HFCs with specific criteria and hazard communication elements.
12. Specific criteria and hazard communication elements would ensure that the topics of ozone-depletion and global warming are not mixed. It would also be coherent with the current systematic in GHS.
13. At a future date, the Sub-Committee may also wish to consider widening the scope of a new Chapter to F-gases that are included in existing regional or national regulations or to expand it to cover all greenhouse gases. For example, the EU Regulation on F-gases<sup>4</sup> lists 19 hydrofluorocarbons, 7 perfluorocarbons (PFC) and sulphur hexafluoride as potential candidates for a new chapter.
14. This extended scope to all greenhouse gases would go beyond a simple integration of the Kigali Amendment only. On the other hand, it would introduce a general labelling obligation for greenhouse gases. Future discussions should take into consideration the scope of the gases that should be included. For example, only those gases monitored in the context of the United Nations Framework Convention on Climate Change (UNFCCC), which are probably also the largest contributors to the climate crisis.
15. Naturally, such a requirement would not cover emissions of greenhouse gases or natural sources but only goods that are placed on the market for use. Greenhouse gases of commercial relevance will usually be put on the market as pressurised gas, thus falling under the relevant provisions of GHS<sup>5</sup>.
16. The benefits of potentially extending the scope and creating specific criteria would be that the positive effects of a classification in terms of awareness raising and contribution to achieving climate action targets would not be limited to HFC but all greenhouse gases and could be multiplied accordingly.

## Conclusion

17. Both option 1 and option 2 will addresses the immediate problem that the current hazard statement assigned in Chapter 4.2 does not accurately reflect the global warming properties of HFCs in Annex F of the Montreal Protocol. While the authors of this document preferred option 2, the Sub-Committee is invited to consider options 1 and 2 as the authors of this paper welcome the perspective of other members and would like to consider the input of all members before making a decision on which option to progress.
18. The Sub-Committee is also invited to discuss on the proposals for future work.

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<sup>4</sup> Regulation (EU) No 517/2014 on fluorinated greenhouse gases <http://data.europa.eu/eli/reg/2014/517/oj>  
The European Union is developing a revision to update the existing Regulation. See [https://climate.ec.europa.eu/eu-action/fluorinated-greenhouse-gases/eu-legislation-control-f-gases\\_en#review-of-the-eu-f-gas-regulation-and-the-new-commission-proposal](https://climate.ec.europa.eu/eu-action/fluorinated-greenhouse-gases/eu-legislation-control-f-gases_en#review-of-the-eu-f-gas-regulation-and-the-new-commission-proposal)

<sup>5</sup> While dry ice is not falling within the scope of GHS, it is subject to transport regulations. Another special case would be water which in its gaseous form is also a greenhouse gas.