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| **UN/SCEGHS/44/INF.3** |
| **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 25 April 2023**  **Forty-fourth session**  Geneva, 10-12 July 2023  Item 2 (h) of the provisional agenda  **Work on the Globally Harmonized System of Classification and  Labelling of Chemicals: Hazard communication for gases  addressed in the Montreal Protocol and other conventions**  **Protocol and other conventions** |

Revision of chapter 4.2 to include classification and hazard communication for greenhouse gasses listed in the annexes of the Montreal Protocol

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

This informal document sets out the changes proposed in document ST/SG/AC.10/C.4/2023/4. Existing (unchanged) text is shown in black, with new text (including existing text placed in a different location) is shown in blueand deleted text is shown in **red** ~~strikethrough~~*~~.~~*

Amendments to chapter 4.2

**“CHAPTER 4.2**

**HAZARDOUS TO THE ~~OZONE LAYER~~ATMOSPHERIC SYSTEM**

**4.2.1 Definitions and general considerations**

This chapter covers substances and mixtures that are hazardous to the atmospheric system due to their ozone depleting and/or global warming potential. For the purposes of this chapter, the following definitions apply:

*Montreal Protocol* is the Montreal Protocol on Substances that Deplete the Ozone Layer as either adjusted and/or amended by the Parties to the Protocol.

*Ozone Depleting Potential ~~(ODP)~~* is an integrative quantity, distinct for each halocarbon source species, that represents the extent of ozone depletion in the stratosphere expected from the halocarbon on a mass-for-mass basis relative to CFC-11. The formal definition of ~~ODP~~ ozone depleting potential is the ratio of integrated perturbations to total ozone, for a differential mass emission of a particular compound relative to an equal emission of CFC-11.

*Global Warming Potential* is a metric that compares the ability of a substance or mixture to trap heat in the atmosphere as compared to a benchmark gas (generally carbon dioxide).The formal definition of global warming potential is the cumulative radiative forcing, both direct and indirect effects, over a specified time horizon resulting from the emission of a unit mass of gas relative to that of carbon dioxide (as the reference gas).

**4.2.2 Classification criteria~~1~~**

4.2.2.1 Substances and mixtures are classified into the hazardous to the ozone layer hazard class due to their ozone depleting potential in accordance with 4.2.2.2 and/or hazardous by contributing to global warming hazard class by their global warming potential in accordance with 4.2.2.3, independently.

**4.2.2.2** ***Hazardous to the ozone layer***

A substance or mixture shall be classified as Category 1 hazardous to the ozone layer according to the following table[[1]](#footnote-2):

**Table 4.2.1: Criteria for substances and mixtures hazardous to the ozone layer**

|  |  |
| --- | --- |
| **Category** | **Criteria** |
| **1** | Any of the controlled substances listed with an ozone depleting potential in annexes to the Montreal Protocol; or Any mixture containing at least one ingredient listed in with an ozone depleting potential in the annexes to the Montreal Protocol, at a concentration ≥ 0.1 % |

**4.2.2.3 *Hazardous by contributing to global warming***

A substance or mixture shall be classified in Category 1 hazardous to global warming according to the following table[[2]](#footnote-3)1:

**Table 4.2.2: Criteria for substances and mixtures that are hazardous by contributing to global warming**

|  |  |
| --- | --- |
| **Category** | **Criteria** |
| **1** | Any of the controlled substances listed with a global warming potential in annexes to the Montreal Protocol; or Any mixture containing at least one ingredient listed with a global warming potential in the annexes to the Montreal Protocol, at a concentration ≥ 0.1 % |

**4.2.3 Hazard communication**

4.2.3.1 General and specific considerations concerning labelling requirements are provided in *Hazard Communication: Labelling* (chapter 1.4). Annex 1 contains summary tables about classification and labelling. Annex 3 contains examples of precautionary statements and pictograms which can be used where allowed by the competent authority. Table 4.2.~~2~~ 3 presents specific label elements for substances and mixtures classified into this hazard class based on the criteria in this chapter.

**Table 4.2.~~2~~3: Label elements for substances and mixtures hazardous to the ~~ozone layer~~atmospheric system**

|  |  |  |
| --- | --- | --- |
|  | **Category 1** | **Category 1** |
|  | **Hazardous to the ozone layer** | **Hazardous by contributing to global warming** |
| **Symbol** | Exclamation mark | Exclamation mark |
| **Signal word** | Warning | Warning |
| **Hazard statement** | Harms public health and the environment by destroying ozone in the upper atmosphere | Harms public health and the environment by contributing to global warming |

4.2.3.2 Some substances and mixtures meet the criteria for classification as hazardous to the ozone layer and hazardous by contributing to global warming. In these cases, the principles outlined in A3.1.2.5 for combining hazard statements can be used to combine the hazard statements for both hazard classes into a single hazard statement (i.e., Harms public health and the environment by contributing to global warming and destroying ozone in the upper atmosphere.).

**4.2.4 Decision logic for substances and mixtures hazardous to the atmospheric system ~~ozone layer~~**

The decision logics for hazardous to the ozone layer (see 4.2.2.2) and hazardous by contributing to global warming (see 4.2.2.3) ~~The decision logic~~ which follow~~s~~ ~~is~~ are not part of the harmonized classification system but is provided here as additional guidance. It is strongly recommended that the person responsible for classification study the criteria before and during use of the decision logics.

***Decision logic 4.2.1 for hazardous to the ozone layer***



***Decision logic 4.2.2 for hazardous by contributing to global warming***

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Consequential amendments to other parts of the GHS

Amendments to chapter 1.2

*Global Warming Potential* is a metric that compares the ability of a substance or mixture to trap heat in the atmosphere as compared to a benchmark gas (generally carbon dioxide).The formal definition of global warming potential is the cumulative radiative forcing, both direct and indirect effects, over a specified time horizon resulting from the emission of a unit mass of gas relative to that of carbon dioxide (as the reference gas).

*Ozone Depleting Potential ~~(ODP)~~* is an integrative quantity, distinct for each source species, that represents the extent of ozone depletion in the stratosphere expected from the species on a mass-for-mass basis relative to CFC-11. The formal definition of ~~ODP~~ ozone depleting potential is the ratio of integrated perturbations to total ozone, for a differential mass emission of a particular compound relative to an equal emission of CFC-11.

Amendments to annex 1

A1.30 Hazardous to the ~~ozone layer~~ atmospheric system (see chapter 4.2 for classification criteria)

| **Classification** | | | **Labelling** | | | | **GHS hazard statement code** |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **GHS hazard class** | **GHS hazard category** | **UN Model Regulations class or division** | **GHS pictogram** | **UN Model Regulations pictograms** | **GHS signal word** | **GHS hazard statement** |
| **Hazardous to the ozone layer** | **1** | *Not applicable* |  | *Not applicable* | **Warning** | Harms public health and the environment by destroying ozone in the upper atmosphere | H420 |
| **Hazardous by contributing to global warming** | **1** | Harms public health and the environment by contributing to global warming | H421 |

Amendments to annex 3, section 1

**Table A3.1.3: Hazard statement codes for environmental hazards**

| **Code** | **Environmental hazard statements** | **Hazard class (GHS chapter)** | **Hazard category** |
| --- | --- | --- | --- |
| **(1)** | **(2)** | **(3)** | **(4)** |
| H421 | **Harms public health and the environment by contributing to global warming** | Hazardous by contributing to global warming(chapter 4.2) | 1 |

Amendments to annex 3, section 2

**Table A3.2.5: Disposal precautionary statements**

| **Code** | **Disposal precautionary statements** | **Hazard class** | **Hazard category** | **Conditions for use** |
| --- | --- | --- | --- | --- |
| **(1)** | **(2)** | **(3)** | **(4)** | **(5)** |
| P502 | **Refer to manufacturer or supplier for information on recovery or recycling.** | Hazardous to the ozone layer (chapter 4.2) | 1 |  |
| Hazardous by contributing to global warming(chapter 4.2) | 1 |

Amendments to annex 3, section 3

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **HAZARDOUS TO THE ~~OZONE LAYER~~ ATMOSPHERIC SYSTEM**  **(CHAPTER 4.2)**  **(Hazardous to the ozone layer)** | | | | | | | | |
| **Hazard category** | **Symbol** | |  | | **Signal word** | **Hazard statement** | | |
| 1 | Exclamation mark | | Warning | Harms public health and the environment by destroying ozone in the upper atmosphere | |
|  | | | | | | | | |
| **Precautionary statements** | | | | | | | | |
| **Prevention** | | **Response** | | **Storage** | | | **Disposal** | |
|  | |  | |  | | | P502 **Refer to manufacturer or supplier for information on recovery or recycling** | |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **HAZARDOUS TO THE ATMOSPHERIC SYSTEM**  **(CHAPTER 4.2)**  **(Hazardous by contributing to global warming)** | | | | | | | | |
| **Hazard category** | **Symbol** | |  | | **Signal word** | **Hazard statement** | | |
| 1 | Exclamation mark | | Warning | Harms public health and the environment by contributing to global warming | |
|  | | | | | | | | |
| **Precautionary statements** | | | | | | | | |
| **Prevention** | | **Response** | | **Storage** | | | **Disposal** | |
|  | |  | |  | | | P502 **Refer to manufacturer or supplier for information on recovery or recycling** | |

1. *The criteria in this chapter are intended to be applied to substances and mixtures. Equipment, articles or appliances (such as refrigeration or air conditioning equipment) containing substances hazardous to the atmospheric system ~~ozone layer~~ are beyond the scope of these criteria. Consistent with 1.1.2.5 (a)(iii) regarding pharmaceutical products, GHS classification and labelling criteria do not apply to medical inhalers at the point of intentional intake.* [↑](#footnote-ref-2)
2. 1 *The criteria in this chapter are intended to be applied to substances and mixtures. Equipment, articles or appliances (such as refrigeration or air conditioning equipment) containing substances hazardous to the atmospheric system ~~ozone layer~~ are beyond the scope of these criteria. Consistent with 1.1.2.5 (a)(iii) regarding pharmaceutical products, GHS classification and labelling criteria do not apply to medical inhalers at the point of intentional intake.* [↑](#footnote-ref-3)