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| **Committee of Experts on the Transport of Dangerous Goods  and on the Globally Harmonized System of Classification and Labelling of Chemicals 11 November 2019** |
| **Sub-Committee of Experts on the Transport of Dangerous Goods** |
| **Fifty-sixth session** |
| Geneva, 4-10 December 2019  Item 3 of the provisional agenda **Listing, classification and packaging** |

Classification of UN1891

Transmitted by the expert from Belgium

Introduction

1. In the Model Regulations UN1891 ETHYLBROMIDE is currently classified as a class 6.1, packing group II substance without any subsidiary hazard.

2. According to the European CLP-regulation this substance nevertheless classifies as acute toxic category 4 for both acute oral toxicity and acute toxicity by inhalation, while classifying as a category 2 flammable liquid. As such, flammability seems to be considered here as a “more important” hazard then acute toxicity.

3. Data from different sources (see annex) show that this substance has a flashpoint of   
-20°C and a boiling point of 38°C. When taking these values into account, according to the Model Regulations, this substance would thus classify as class 3, packing group II substance according to paragraph 2.3.2.6.

4. As a consequence, this substance should rather be classified as a class 3, packing group II substance according to the *precedence of hazards* table in paragraph 2.0.3.3 of the Model Regulations, instead of as a class 6.1, packing group II substance.

5. Even more, as already indicated, according to the CLP-regulation UN1891 classifies as a category 4 substance for both acute oral toxicity and acute inhalation toxicity. In contrast with the current classification for transport as a class 6.1, packing group II substance, table A1.19 of Annex 1 to the GHS seems to indicate that category 4 of neither acute oral nor inhalation toxicity requires classification as toxic according to the Model Regulations.

6. This is confirmed when applying the values for the LD50 (data in annex) according to the classification principles of paragraph 2.6.2.2.4.1 of the Model Regulations. The same conclusion can also be drawn when looking at the values for the LC50 (data in annex). When applying the principles for classification of substances for acute toxicity by inhalation of vapors in paragraphs 2.6.2.2.4.3 to 2.6.2.2.4.5 of the Model Regulations, this substance does not classify as acute toxic by inhalation.

7. Taking into account the data given and what has been explained in the previous paragraphs, it seems that the current classification of UN1891 is not correct according to the principles of the Model Regulations. Nevertheless, paragraph 2.6.2.2.2 specifies that *account shall be taken of human experience*, which might be the reason for the current classification of UN1891. However, even if this would be the reason for classification as a toxic substance, it still seems inappropriate not to communicate the flammability as a subsidiary hazard.

Proposal

8. The aim of this document is to inform the Sub-Committee of this apparent inappropriate classification and hear its opinion on the following ways forward:

(a) Align the current classification of UN1891 with what the given scientific data indicate and as such reclassify UN1891 as a class 3, packing group II substance. With or without class 6.1 as a subsidiary hazard.

(b) Keep the current classification of UN1891 and take into account what the given scientific data indicate and as such add class 3 as a subsidiary hazard for UN1891.

(c) Any other way forward towards clearly indicating the hazards of this substance.

Annex

Obtained data for UN1891

**Table 1: Flash- and boiling point, LD50 and LC50**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Property    Source | Flashpoint (°C) | Boiling point (°C) | Oral toxicity LD50 (mg/kg) | Inhalation toxicity LC50 |
| BIG Kaleidos Database1 | -20 | 38 | / | / |
| Pubmed Database2 | -20 | 38 | 1350 (rat) | 26980 mg/kg (rat)  16230 mg/kg (mouse) |
| Concise International Chemical Assessment Document 42 (WHO)3, 4 | -20 | 38.4 | 1350 (rat) | 21200 mg/m³ = 4681 ppm (rat, 4h)  12300 mg/m³ = 2723 ppm  (mouse, 4h) |
| MSDS Bromoethane5 | -23 | 37 - 40°C | 1350 (rat) | 20,9 mg/l (rat, 4h)  26980 ppm (rat, 1h) |

**Table 2: Volatility and vapour pressure**

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| --- | --- |
| Source | Value |
| MSDS Bromoethane5 | Volatility: 400 mm Hg |
| ILO international chemical safety card6 | Vapor pressure at 20°C: 51 kPa |

Sources

1: <https://www.big.be/en-us/Products/Kaleidos>

2: <https://pubchem.ncbi.nlm.nih.gov/compound/Bromoethane#section=Acute-Effects>

3: <https://www.who.int/ipcs/publications/cicad/en/cicad42.pdf?ua=1>, Data LC50: source 4

4: Only for LC50: In the document for LC50 rat: see table 5; LC50mice: see table 16. <https://ntp.niehs.nih.gov/ntp/htdocs/lt_rpts/tr363.pdf?utm_source=direct&utm_medium=prod&utm_campaign=ntpgolinks&utm_term=tr363>

5: <https://www.fishersci.com/store/msds?partNumber=AC154215000&productDescription=BROMOETHANE+98%25+500ML&vendorId=VN00032119&countryCode=US&language=en>

6: <http://www.ilo.org/dyn/icsc/showcard.display?p_version=2&p_card_id=1378>