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 **5 December 2018**

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Item 3 (a) of the provisional agenda
Classification criteria and related hazard communication: work of the Sub-Committee of Experts on the Transport of Dangerous Goods (TDG) on matters of interest to the GHS

Comments on ST/SG/AC.10/C.4/2018/25 - Proposal to classify chemicals under pressure within Chapter 2.3 of the GHS and in SP362 of the Model Regulations

Transmitted by the expert from the CEFIC, EIGA

1. In order to facilitate a solution for this biennium the US proposes to modify the new section 2.3.2 in ST/SG/AC.10/C.4/2018/25 to read as follows:

"**2.3.2 Chemicals under pressure**

2.3.2.1 ***Definition***

~~*Chemicals under pressure* are mixtures containing 50% or more by mass of liquids or solids (e.g., pastes or powders) and one or more gases, in pressure receptacles other than aerosol dispensers, at a pressure of 200 kPa (gauge) or more at 20 °C. The gas can be a compressed, liquefied or dissolved gas under pressure.~~

Chemicals under pressure are liquids or solids (e.g., pastes or powders), pressurized with a gas at a pressure of 200 kPa (gauge) or more at 20°C in pressure receptacles other than aerosol dispensers and which are not classified as gases under pressure.

Note: Chemicals under pressure typically contain 50% or more by mass of liquids or solids whereas mixtures containing more than 50% gases are typically considered as gases under pressure.

~~***NOTE:*** *Mixtures, containing less than 50% by mass of liquids or solids, (e.g., pastes or powders), should be considered for classification as gases under pressure (see chapter 2.5) or, if not meeting the criteria for classification as gases under pressure, should be considered for other physical hazard classes appropriate for liquids or solids (see decision logic 2.3.2).~~

2.3.2.2 ***Classification criteria***

2.3.2.2.1 ~~Mixtures containing liquids or solids (i.e., pastes or powders) and gases, in pressure receptacles other than an aerosol dispenser are classified as chemicals under pressure if they contain 50 % or more of liquids and/or solids and the pressure in the receptacle is higher than 200 kPa at 20 °C.~~ Chemicals under pressure ~~They~~ are classified in one of three categories of this

hazard class, according to Table 2.3.2, depending on their content of flammable components and their heat of combustion (see 2.3.2.4.1).

2.3.2.2.2 Flammable components are components 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).

Table 2.3.2 Criteria for chemicals under pressure

Category	Criteria
1	Any chemical under pressure that a) contains ≥ 85% flammable components (by mass) and b) has a heat of combustion of ≥ 20 kJ/g.
2	Any chemical under pressure that a) contains > 1 % flammable components (by mass) and b) has a heat of combustion < 20 kJ/g or that a) contains < 85 % flammable components (by mass) and b) has a heat of combustion ≥ 20 kJ/g.
3	Any chemical under pressure that a) contains ≤ 1% flammable components (by mass) and b) has a heat of combustion of < 20 kJ/g."

NOTE 1: *The flammable components in a chemical under pressure do not include pyrophoric, self-heating or water-reactive, substances and mixtures because such components are not allowed in chemicals under pressure according to the Recommendations on the Transport of Dangerous Goods, Model Regulations.*

NOTE 2: *Chemicals under pressure do not fall additionally within the scope of section 2.3.1 (aerosols), chapters 2.2 (flammable gases), 2.5 (gases under pressure), 2.6 (flammable liquids) and 2.7 (flammable solids). Depending on their contents, chemicals under pressure may however fall within the scope of other hazard classes, including their labelling elements.*

2.3.2.3 *Hazard communication*

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 2.3.2.1: Label elements for chemicals under pressure

	Category 1	Category 2	Category 3
Symbol	Flame Gas cylinder	Flame Gas cylinder	Gas cylinder
Signal word	Danger	Warning	Warning
Hazard statement	Extremely flammable chemical under pressure: May explode if heated	Flammable chemical under pressure: May explode if heated	Chemical under pressure: May explode if heated

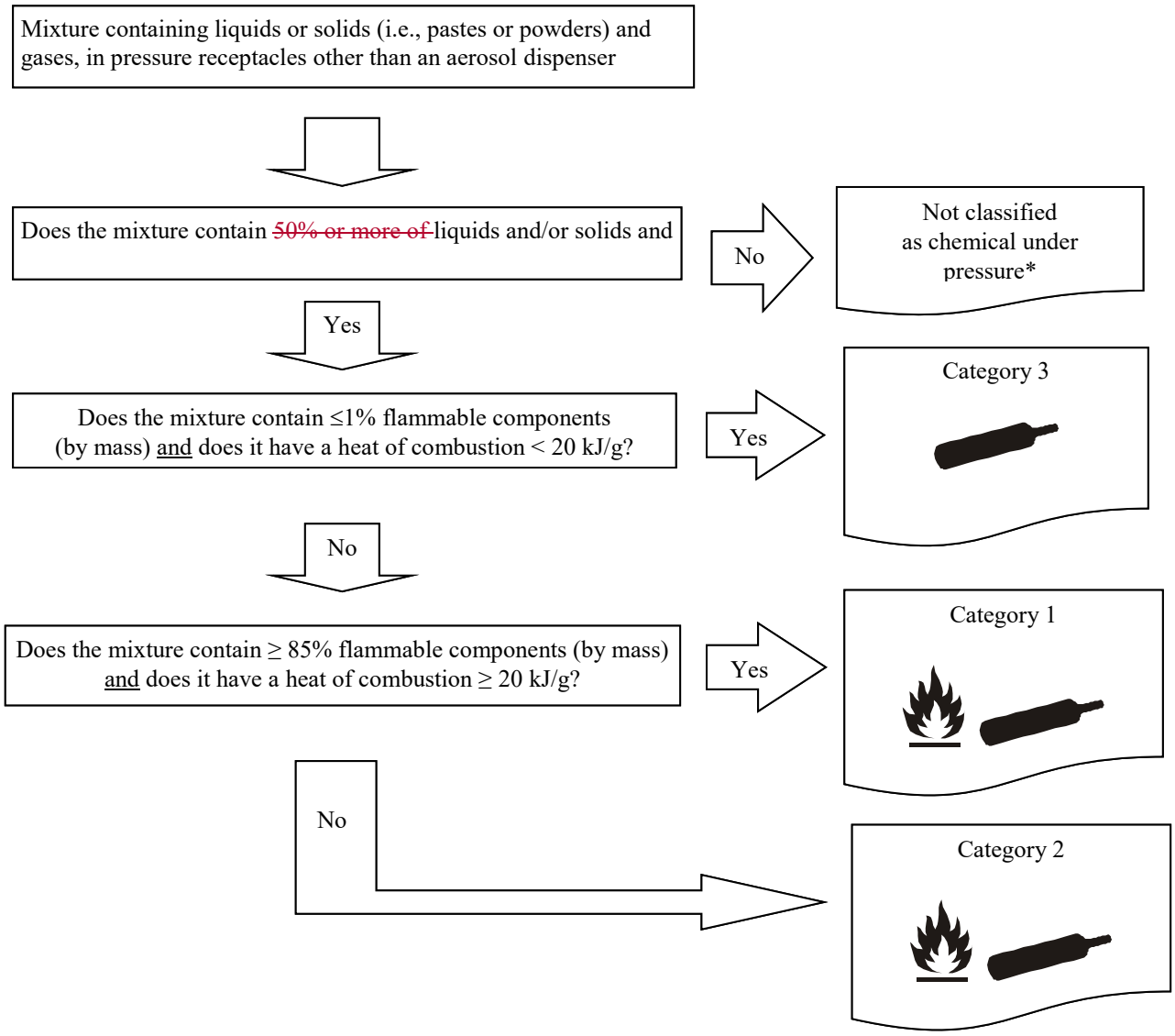
2.3.2.4 ***Decision logic***

The decision logic 2.3.2 has been provided as additional guidance. It is strongly recommended that the person responsible for classification studies the criteria before and during use of the decision logic.

2.3.2.4.1 *Decision logic*

To classify a mixture as chemicals under pressure, data on its pressure, its flammable components, and on its specific heat of combustion are required. Classification should be made according to decision logic 2.3.2.

Decision logic 2.3.2



*should be considered for classification in other physical hazard classes as appropriate".

2.3.4.2 (as amended in ST/SG/AC.10/C.4/70, Annex I) is renumbered as 2.3.3.

2. In the consequential amendments, the United States of America also propose to add the following:

Annex 3, Section 2, Table A3.2.3

Insert the following rows:

Code (1)	Response precautionary statement (2)	Hazard class (3)	Hazard category (4)	Conditions for use (5)
P381	In case of leakage, eliminate all ignition sources.	Chemicals under pressure (chapter 2.3)	1,2	
P376	Stop leak if safe to do so.	Chemicals under pressure (chapter 2.3)	1, 2, 3	
P370	In case of fire:	Chemicals under pressure (chapter 2.3)	1,2	
P378	Use ... to extinguish.	Chemicals under pressure (chapter 2.3)	1,2	
P370 + P378	In case of fire, use …. to extinguish.	Chemicals under pressure (chapter 2.3)	1, 2	Manufacturer/supplier or the competent authority to specify appropriate media.

Annex 3, Section 2, Table A3.2.4

Insert the following rows:

Code (1)	Storage precautionary statement (2)	Hazard class (3)	Hazard Category (4)	Conditions for use (5)
P403	Store in a well-ventilated place.	Chemicals under pressure (chapter 2.3)	1, 2, 3	
P410	Protect from sunlight.	Chemicals under pressure (chapter 2.3)	1, 2, 3	*May be omitted for chemicals under pressure filled in transportable cylinders in accordance with packing instruction P200 or P206 of the UN Recommendations on the Transport of Dangerous Goods, Model Regulations, unless those chemicals under pressure are subject to (slow) decomposition or polymerization, or the competent authority provides otherwise.*
P410 + P403	Protect from sunlight. Store in a well-ventilated place.	Chemicals under pressure (chapter 2.3)	1, 2, 3	*P410 may be omitted for chemicals under pressure filled in transportable cylinders in accordance with packing instruction P200 or P206 of the UN Recommendations on the Transport of Dangerous Goods, Model Regulations, unless those chemicals under pressure are subject to (slow) decomposition or polymerization, or the competent authority provides otherwise.*