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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****Sub-Committee of Experts on the Transport  
of Dangerous Goods  
Forty-second session**

Geneva, 3 – 11 December 2012

Item 8 (e) of the provisional agenda

**Issues relating to the Globally Harmonized System  
of Classification and Labelling of Chemicals:  
Miscellaneous****Sub-Committee of Experts on the Globally Harmonized  
System of Classification and Labelling of Chemicals****Twenty-fourth session**

Geneva, 12–14 December 2012

Item 2 (d) of the provisional agenda

**Updating of the Globally Harmonized System of  
Classification and Labelling of Chemicals (GHS):  
Annexes****Amendments to physical hazard precautionary statements****Transmitted by the expert from the United Kingdom on behalf of the  
informal correspondence group on Annexes 1-3 of the GHS<sup>1</sup>****Introduction**

1. At the 20<sup>th</sup> session of the Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals (GHS Sub-Committee), terms of reference were agreed for the continuing work of the informal correspondence group on improvement of Annexes 1-3 of the GHS. These were:

“Pursue work to further improve Annexes 1, 2 and 3 of the GHS, following the work streams hereafter, with the first two given priority:

- (i) Work stream 1: to develop proposals to rationalize and improve the usability of hazard and precautionary statements, including proposals to eliminate redundancies among these statements;
- (ii) Work stream 2: to adjust as appropriate the precautionary statements for physical hazards, their allocation to hazard classes and categories, and their conditions for use;

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<sup>1</sup> In accordance with the programme of work of the Sub-Committee for 2011-2012 approved by the Committee at its fifth session (refer to ST/SG/AC.10/C.3/76, para. 116 and ST/SG/AC.10/38, para. 16).

- (iii) Work stream 3: to improve the presentation of Annexes 1, 2 and 3 of the GHS, taking into account the intended audiences, uses and purposes of the GHS”.
2. This working document presents a set of proposals within work stream 2 of the group’s terms of reference.

## Background

3. This work stream derives from an earlier proposal by the European Chemical Industry Council (CEFIC) in INF.9 (submitted to the 15th session), to make some revisions to the GHS precautionary statements for physical hazards. CEFIC noted that some amendments of precautionary statements were needed, as well as alignment of these statements between hazard classes having more or less the same hazard characteristics. It was subsequently agreed that the work should be taken forward within the informal correspondence group on Annexes 1-3 to ensure that the outcomes were consistent with the group’s work on rationalisation of the GHS precautionary statements.

4. A set of proposals for the above amendments has been developed by a sub-group of the informal correspondence group with expertise in physical hazards. These proposals were presented in draft to the GHS Sub-Committee at its 23rd session (July 2012) and were discussed in the face-to-face meeting held in the margins of that session. A final version has now been prepared taking into account comments raised at and since the July meeting.

5. The aims of these proposals are to:

- (a) Correct the assignment of hazard classes to physical hazard precautionary statements in some cases where the current assignments are anomalous;
- (b) Align precautionary statements for hazard classes and categories with similar hazard characteristics. In particular, it is proposed that the precautionary statements for organic peroxides and self-reactive substances are aligned, since the hazardous properties of these hazard classes are more or less the same;
- (c) Rationalise the physical hazard precautionary statements in certain cases where information is duplicated or redundant;
- (d) Simplify and clarify wording of statements where this is currently unclear or excessively complex;
- (e) Make some technical amendments to clarify and refine the conditions for use for certain precautionary statements;

6. A full proposal is given in the annex to this document and a “track-changes” version of the proposed amendments is given in informal document INF.5 (submitted to the 24<sup>th</sup> session of the GHS sub-Committee). INF.5 also contains an explanation and justification for each proposed amendment in line with the aims above. INF.5 also contains the relevant excerpts of Annex 3 of the GHS (sections 2 and 3), as amended by these proposals together with those made in document ST/SG/AC.10/C.4/2012/20.

7. The Sub-Committee is asked to consider the changes presented in the Annex to this document for inclusion in the 5th revised edition of the GHS.

## **Proposal to continue the work of the informal correspondence group**

8. This document presents a proposal within work stream 2 of the informal correspondence group's terms of reference, and a proposal within work stream 3 is presented in document ST/SG/AC.10/C.4/2012/22.

9. In relation to work stream 1, a set of amendments to the GHS precautionary statements was adopted by the GHS Sub-Committee in 2010 based on the proposal in document ST/SG/AC.10/C.4/2010/12 (refer to the report of the Sub-Committee on its 20<sup>th</sup> session, ST/SG/AC.10/C.4/40 par. 19) and was incorporated into the fourth revised edition of the GHS. However it was noted in document ST/SG/AC.10/C.4/2010/12 that it remains an issue that a large number of GHS precautionary statements can be triggered for a substance or mixture with even a relatively simple classification, often leading to 30-40 precautionary statements for inclusion on the label. Including such a large number of precautionary statements tends to obscure effective hazard communication and leads to considerable practical difficulties for manufacturers and suppliers in designing suitable labels, especially when label space is limited or multiple languages must be included.

10. It is therefore proposed that the correspondence group continues its work on work stream 1 with a view to rationalising and improving the usability of the precautionary statements. In particular, the group intends to focus on development of precedence rules and guidance for selection of statements, with a view to helping manufacturers and suppliers select a suitable range of statements for inclusion on labels.

11. It is also proposed that the terms of reference for the informal correspondence group remain open-ended so that it can consider any further issues relating to the GHS precautionary statements and Annexes 1-3 of the GHS that the Sub-Committee wishes to refer to it.

12. The GHS Sub-Committee's agreement is therefore sought for the informal group to continue with the following revised terms of reference for inclusion in the programme of work for 2013–2014:

- (a) Work stream 1: to develop proposals to rationalize and improve the usability of hazard and precautionary statements. These may include proposals to eliminate redundancies among these statements, and proposals for further guidance and precedence rules for use of the statements.
- (b) Work stream 2: to address any other issues relating to Annexes 1-3 and the use of hazard and precautionary statements that the Subcommittee wishes to refer to the informal correspondence group.

## Annex

### Proposal for amendment to Annex 3 (section 3) of the GHS

Amend the precautionary statements in the tables A3.2.2, A3.2.3, A3.2.4, A3.2.5 and the table in A3.3.5.1 as follows:

#### **P202**

Remove this precautionary statement from the hazard category “Unstable explosive”.

#### **P210**

Amend to read: “Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking”

Remove the condition for use “Manufacturer/supplier or the competent authority to specify applicable ignition source(s)”

For flammable liquids, category 4, remove the condition for use “- *specify to keep away from flames and hot surfaces.*”

For oxidizing solids and oxidizing liquids categories 1, 2 and 3 remove the condition for use “- *specify to keep away from heat.*”

#### **P220**

Amend to read “Keep away from clothing and other combustible materials”.

Remove this statement from the hazard classes “Self-reactive substances and mixtures” and “Organic Peroxides”.

For oxidising gases, category 1, and oxidising liquids and solids, categories 2 and 3, remove the condition for use, “Manufacturer/supplier or the competent authority to specify other incompatible materials.”

For oxidising liquids and solids category 1, remove the condition for use, “- *specify to keep away from clothing and other combustible materials.*”

In table A3.2.2, add category 1 to the “hazard category” column in the row for oxidising liquids and solids categories 2 and 3. Remove the separate rows for oxidising liquids and solids category 1 (i.e. there should be single rows for oxidising liquids, categories 1, 2 and 3 and oxidising solids, categories 1, 2 and 3).

#### **P221**

Delete this precautionary statement.

#### **P222**

Add the condition for use “ – if emphasis of the hazard statement is deemed necessary”.

#### **P223**

Add the condition for use “ – if emphasis of the hazard statement is deemed necessary”.

**P230**

Add the condition for use “- for substances and mixtures which are wetted, diluted, dissolved or suspended with a phlegmatizer in order to reduce or suppress their explosive properties (desensitized explosives)”

**P231**

Amend to read “Handle and store contents under inert gas/...”

Apply this statement additionally to Pyrophoric liquids (chapter 2.9), category 1, and Pyrophoric solids (chapter 2.10) category 1.

For pyrophoric liquids and solids add the condition for use “... Manufacturer/supplier or the competent authority to specify appropriate liquid or gas if “inert gas” is not appropriate.”

For substances and mixtures which, in contact with water, emit flammable gases, categories 1, 2 and 3, add the following conditions for use:

“- *if the substance or mixture reacts readily with moisture in air*”

“...Manufacturer/supplier or the competent authority to specify appropriate liquid or gas if “inert gas” is not appropriate.”

**P233**

For flammable liquids categories 1, 2 and 3, amend the condition for use to read “- *if the liquid is volatile and may generate an explosive atmosphere*”.

Apply this statement additionally to Pyrophoric liquids (chapter 2.9), category 1 and Pyrophoric solids (chapter 2.10), category 1.

**P234**

Amend to read: “Keep only in original packaging.”

Apply this statement additionally to Explosives (chapter 2.1) Divisions 1.1, 1.2, 1.3, 1.4, 1.5.

In column 2 of Table A3.2.2, amend the name of the hazard class “Substances and mixtures Corrosive to metals” to read “Corrosive to metals”.

**P235**

Remove this statement from the hazard category, Flammable liquids, category 4.

For flammable liquids categories 1, 2 and 3, add the condition for use: “- *for flammable liquids Category 1 and other liquids that are volatile and may generate an explosive atmosphere*”.

For self-reactive substances and mixtures Types A, B, C, D, E, F, add the condition for use: “*may be omitted if P411 is given on the label.*”

For self-heating substances and mixtures, categories 1 and 2, add the condition for use: “*may be omitted if P413 is given on the label.*”

For organic peroxides, Types A, B, C, D, E, F, add the condition for use: “*may be omitted if P411 is given on the label.*”

**P240**

Amend to read: “Ground and bond container and receiving equipment”

For flammable liquids, categories 1, 2 and 3, amend the condition for use to read: “- *if the liquid is volatile and may generate an explosive atmosphere*”

For flammable solids, categories 1 and 2, amend the condition for use to read: “- *if the solid is electrostatically sensitive.*”

Apply this statement additionally to Self-reactive substances and mixtures (Chapter 2.8), Types A-F, and Organic peroxides (chapter 2.15), Types A-F. For these hazard categories add the condition for use, “- *if electrostatically sensitive and able to generate an explosive atmosphere*”

**P241**

Amend to read: “Use explosion-proof [electrical/ventilating/lighting/...] equipment”

For flammable liquids, categories 1, 2 and 3, amend the conditions for use to read:

- “- *if the liquid is volatile and may generate an explosive atmosphere.*
- *text in square brackets may be used to specify specific electrical, ventilating, lighting or other equipment if necessary and as appropriate.*
- *precautionary statement may be omitted where local or national legislation introduces more specific provisions*”.

For flammable solids, categories 1 and 2, amend the conditions for use to read:

- “- *if dust clouds can occur.*
- *text in square brackets may be used to specify specific electrical, ventilating, lighting or other equipment if necessary and as appropriate.*
- *precautionary statement may be omitted where local or national legislation introduces more specific provisions*”.

**P242**

Amend to read “Use non-sparking tools”.

Add the condition for use: “- *if the liquid is volatile and may generate an explosive atmosphere and if the minimum ignition energy is very low. (This applies to substances and mixtures where the minimum ignition energy is <0.1mJ, e.g. carbon disulfide)*”

**P243**

Amend to read “Take action to prevent static discharges”.

Add the following conditions for use:

- “- *if the liquid is volatile and may generate an explosive atmosphere*”
- “- *may be omitted where local or national legislation introduces more specific provisions*”

**P250**

Amend to read: “Do not subject to grinding/shock/friction/...”

Apply the statement additionally to “Unstable Explosives”.

Add the condition for use: “- *if the explosive is mechanically sensitive*”

**P280**

Apply the statement additionally to “Unstable explosives”

For Explosives (chapter 2.1), remove the condition for use “- *specify face protection*” and amend the remaining condition for use to read: “Manufacturer/supplier or the competent authority to specify the appropriate type of equipment”.

For the group of hazard classes “Flammable liquids”, “Flammable solids”, “self-reactive substances and mixtures”, “pyrophoric liquids and solids”, “self-heating substances and mixtures”, “Substances and mixtures which, in contact with water, emit flammable gases”, “oxidizing liquids and solids”, and “Organic peroxides”, remove the condition for use: “- *specify protective gloves and eye/face protection*” and amend the remaining condition for use to read: “Manufacturer/supplier or the competent authority to specify the appropriate type of equipment”.

**P231+P232**

Amend to read: “Handle and store contents under inert gas/... Protect from moisture.”

Apply this statement additionally to Pyrophoric liquids (chapter 2.9), category 1, and Pyrophoric solids (chapter 2.10) category 1, and add the condition for use: “... Manufacturer/supplier or the competent authority to specify appropriate liquid or gas if “inert gas” is not appropriate.”

For substances and mixtures which, in contact with water, emit flammable gases, categories 1, 2 and 3, add the following conditions for use:

“- *if the substance or mixture reacts readily with moisture in air*”

“...Manufacturer/supplier or the competent authority to specify appropriate liquid or gas if “inert gas” is not appropriate.”

**P302**

Apply the statement additionally to pyrophoric solids (Chapter 2.10) category 1.

Apply the statement additionally to Substances which, in contact with water, emit flammable gases (chapter 2.12), categories 1 and 2.

**P334**

Amend to read: “Immerse in cool water [or wrap in wet bandages]”

For pyrophoric liquids and solids category 1, add the condition for use: “- *text in square brackets to be used for pyrophoric liquids and solids*”.

For substances and mixtures which, in contact with water, emit flammable gases, categories 1 and 2, add the condition for use: “- *Use only “Immerse in cool water.” Text in square brackets should not be used.*”

**P353**

Amend to read: "Rinse skin with water [or shower]".

Add the condition for use: "*- text in square brackets to be included where the manufacturer/supplier or the competent authority consider it appropriate for the specific chemical.*"

**P370**

Apply the statement additionally to "Unstable Explosives".

Apply the statement additionally to Organic Peroxides (Chapter 2.15), Types A, B, C, D, E, F.

**P372**

Amend to read: "Explosion risk."

Delete the condition for use "Except if explosives are 1.4S AMMUNITION OR COMPONENTS THEREOF".

Apply the statement additionally to Self-reactive substances and mixtures (chapter 2.8), Type A and Organic peroxides (chapter 2.15) Type A.

**P373**

For the hazard class "Explosives" add the condition for use "*- except for explosives of division 1.4S in transport packaging*"

Apply the statement additionally to Self-reactive substances and mixtures (chapter 2.8), Type A and Organic peroxides (chapter 2.15) Type A.

**P374**

Delete this precautionary statement.

**P375**

Apply additionally to Explosives (chapter 2.1) Division 1.4, with the condition for use: "*- for explosives of division 1.4S in transport packaging*"

Remove from the hazard category, Self-reactive substances and mixtures, Type A (apply the statement only to Type B self-reactives).

Apply additionally to Organic peroxides (chapter 2.15), Type B.

**P378**

Remove the statement from the hazard category, Self-reactive substances and mixtures, Type A. (Statement should only be applied to self-reactives Type B-F.)

Apply additionally to Organic peroxides (chapter 2.15), Types B, C, D, E and F.

**P380**

Apply additionally to Organic peroxides (chapter 2.15), types A and B.

**P381**

Amend to read: "In case of leakage, eliminate all ignition sources."



### **P390**

Amend the name of the hazard class in column 2 of Table A3.2.3 to read: “Corrosive to metals” (i.e.: delete the words “Substances and mixtures”).

### **P335 + P334**

Add P302, so that combined statement is **P302 + P335 + P334**.

Amend the wording of the combined statement to read: “IF ON SKIN: Brush off loose particles from skin. Immerse in cool water [or wrap in wet bandages].”

For substances and mixtures which, in contact with water, emit flammable gases, categories 1 and 2, add the condition for use: “- *Use only “Immerse in cool water”. Text in square brackets should not be used.*”

### **P303 + P361 + P353**

Amend to read: “IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water [or shower].”

Add the condition for use: “- *text in square brackets to be included where the manufacturer/supplier or the competent authority consider it appropriate for the specific chemical.*”

### **P336 + P315 (new)**

Add a new combination statement P336 + P315 to Table A3.2.3 to read as follows:

“Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical advice/attention”.

The statement should apply to Gases under pressure (chapter 2.5), Refrigerated liquefied gas.

### **P370 + P378**

Remove the statement from the hazard category, Self-reactive substances and mixtures, Type A. (Statement should only be applied to self-reactives Type B-F.)

Apply additionally to Organic peroxides (chapter 2.15), Types B, C, D, E and F.

### **P370 + P380**

Replace with a new combined precautionary statement **P370 + P372 + P380 + P373**. This should read “In case of fire: Explosion risk. Evacuate area. Do NOT fight fire when fire reaches explosives.”

Apply the new combination statement to Explosives (Unstable explosives, Divisions 1.1, 1.2, 1.3, 1.4, 1.5), Self-reactive substances and mixtures (chapter 2.8) Type A and Organic Peroxides (chapter 2.15) type A.

### **P370 + P380 + P375**

Apply additionally to Explosives (chapter 2.1), Division 1.4 and for this hazard category, add the condition for use: “- *for explosives of division 1.4S in transport packaging.*”

Remove the statement from the hazard category, Self-reactive substances and mixtures, Type A. Statement should only apply to Self-reactives type B.

Apply the statement additionally to Organic peroxides (chapter 2.15), Type B.

**P401**

Amend to read: ‘Store in accordance with...’

Amend the condition for use to read: “... Manufacturer/supplier or the competent authority to specify local/regional/national/international regulations as applicable”.

**P403**

For flammable liquids, categories 1, 2, 3 and 4, add the condition for use: “- for flammable liquids Category 1 and other liquids that are volatile and may generate an explosive atmosphere.”

Apply the statement additionally to Organic peroxides (chapter 2.15), Types A, B, C, D, E and F.

For self-reactive substances and mixtures (chapter 2.8) Types A-F and Organic peroxides (chapter 2.15), types A-F, add the condition for use: “- except for temperature controlled self-reactive substances and mixtures or organic peroxides because condensation and consequent freezing may take place.”

**P406**

Amend to read: “Store in a corrosion resistant/... container with a resistant inner liner.”

Amend the hazard class in column 2 of Table A3.2.4 to read “Corrosive to metals”.

Add the condition for use: “- *may be omitted if P234 is given on the label*”.

**P411**

Add the condition for use: “- if temperature control is required (according to section 2.8.2.3 or 2.15.2.3 of the GHS) or if otherwise deemed necessary”.

**P420**

Amend to read “Store separately”.

Apply the statement additionally to Oxidizing liquids (chapter 2.13), category 1 and Oxidizing solids (chapter 2.14), category 1.

**P422**

Delete this statement.

**P403 + P235**

For Flammable liquids, categories 1, 2, 3 and 4 add the condition for use “- for flammable liquids, Category 1 and other liquids that are volatile and may generate an explosive atmosphere”

Apply the statement additionally to Organic peroxides (chapter 2.15), Types A, B, C, D, E, F.

**P411 + P235**

Delete this precautionary statement.

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