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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 Globally Harmonized System of Classification and Labelling of Chemicals

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UPDATING OF THE SECOND REVISED EDITION OF THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS)

Revision of Annexes 1, 2 and 3 of the GHS:
Hazard and precautionary statements

Transmitted by the expert from the United Kingdom
on behalf of the correspondence group

Introduction

1. At its thirteenth session (July 2007), UNSCEGHS considered INF paper UN/SCEGHS/13/INF.8 reporting on the outcome of discussion with the correspondence group on the scope and audience of Annexes 1 to 3, and putting forward a proposal for the scope of future work for the group.

2. At this session, UNSCEGHS agreed that the work of the correspondence group should be divided into two Workstreams. Workstream 1 will develop as appropriate combined hazard statements and combined precautionary statements, and will include proposals to eliminate current redundancies in some precautionary statements (henceforward, 'PS'). Workstream 2 will aim to improve the presentation of Annexes 1 to 3 of the GHS, taking into account the intended audiences, uses and purposes of the GHS. It was also agreed that Workstream 1 should be given priority at present.

3. This paper aims to progress work within Workstream 1 by setting out approaches currently under discussion in the Correspondence Group to combination and reduction in redundancy among the hazard statements and PS. The overall objectives of the approaches are:

   (a) to enable improved hazard communication on labels without loss of hazard and safety information, and;

   (b) to increase the ease with which manufacturers/suppliers can select PS for a relevant context.

Hazard statements

4. Attention in this paper is focused mainly on hazard statements for health-based classifications. The issue to be addressed is that in practice numerous hazard statements are often triggered by a given substance or mixture, with the possible consequence that the label becomes crowded and key hazard communication messages are lost.

5. The objective of the present approach is to increase the usability and clarity of the GHS hazard statements by reducing the number of statements and words that have to appear on the label where two or more hazard statements are triggered within the same or comparable hazard classes and categories.

6. Due to the structured nature of the hazard statements, there is relatively little scope for further rationalisation. Nevertheless, given that space on labels is at a premium, even proposals which are relatively limited in scope could nevertheless be valuable in helping towards achieve effective hazard communication.

7. Probably the greatest scope for reducing the amount of hazard 'wordage' on labels comes from introducing the possibility of combined hazard statements. In doing this it is proposed that combined hazard statements should be allowed only within equivalent severity of hazards (so, for example, for acute toxicity only statements including 'Toxic' can be combined), or within similar or comparable hazard categories (thus, a statement such as 'toxic if swallowed, and to aquatic life' would not be permitted).

8. Where a combined hazard statement is used, it is proposed that it replaces the separate component statements, with the exact form of words specified being used. Nevertheless, use of the combined hazard statements is suggested to be optional rather than mandatory, leaving jurisdictions to decide whether or not to require the use of combined hazard statements, or to leave the choice to the supplier.

Examples

9. Many substances and mixtures are classified for acute toxicity by two or more routes of exposure. For example the classification or cadmium cyanide includes:

Acute toxicity – oral; category 1; **Fatal if swallowed** (H300)
Acute toxicity – dermal; category 1; **Fatal in contact with skin** (H310)
Acute toxicity – inhalation; category 1; **Fatal if inhaled** (H330)

To facilitate hazard communication and reduce the number of hazard statements on the label it would be appropriate to have a combined hazard statement:

Fatal if swallowed, in contact with skin, or if inhaled

10. There are also many substances and mixtures that have properties leading to classification with the following two hazard classes and categories:

Skin corrosion/irritation; category 2; **Causes skin irritation** (H315)
Serious eye damage/eye irritation; category 2B; **Causes eye irritation** (H320)

In this case an appropriate hazard statement would be:

Causes skin and eye irritation

11. Similarly, there are many examples of substances and mixtures that are both skin and respiratory sensitisers (examples would include anhydrides and isocyanates):

Skin sensitization; category 1; **May cause an allergic skin reaction** (H317)
Respiratory sensitization; **May cause allergy or asthma symptoms or breathing difficulties if inhaled.**

12. Again to facilitate hazard communication and reduce the number of hazard statements on the label it would be appropriate to have a combined hazard statement:

May cause an allergic skin reaction, and [allergy or] asthma symptoms or breathing difficulties if inhaled.

13. A summary of possible combined hazard statements is given in Annex 1.

14. One further proposal is to add a simple 'precedence' for the class, hazardous to the aquatic environment. In this class, classification may be for an acute or chronic hazard, or both. The criteria for the chronic categories combine those for the corresponding acute categories with additional criteria for long lasting effects. This is reflected in the hazard statements, e.g.

Hazardous to the aquatic environment – acute; category 1; **Very toxic to aquatic life** (H400)
Hazardous to the aquatic environment – chronic; category 1; **Very toxic to aquatic life with long lasting effects** (H410)

15. A substance or mixture that is chronically toxic to the aquatic environment in categories 1, 2, or 3 would therefore also be acutely toxic to the aquatic environment in categories 1, 2 and 3 respectively. Therefore, if a substance or mixture is required to have the statement H410, H400 can be omitted.

Precautionary statements

16. Presently there are a number of factors limiting the usability of the GHS PS:

(a) A high number of PS may be triggered for a substance or mixture, even with a relatively simple classification. Including all the statements triggered for a given substance would arguably confuse the user and obscure hazard communication.

(b) Relatedly, the amount of text that would appear on the label for many substances or mixtures would be confusing and arguably too great for clear communication, if all triggered PS were included.

(c) Selection of appropriate PS can be difficult when a large number are triggered, and there is currently no clear guidance for doing this.

(d) Different hazard classifications trigger similar but different statements, leading to arguably unnecessary small differences between precautionary measures recommended in different circumstances.

17. The potentially high number of statements triggered by a classification and the difficulty in selecting among them for labelling is illustrated by an example provided by an industry representative in Annex 2. This shows the GHS label for butanone (methyl ethyl ketone). Even with the existing combination PS, 19 PS are triggered for potential inclusion on the label. Including them all would arguably risk obscuring the key messages that need to be communicated – to ensure clarity of hazard communication it would seem more appropriate to limit the number of PS to around 6. However it is not obvious which statements should be discarded to achieve this reduction.

18. However, given the higher number and the less structured nature of the PS, there is greater scope than with hazard statements for reducing both the number of PS and the amount of precautionary 'wordage' that must appear on labels. Furthermore, given that unlike hazard statements, selection of PS for a label is a matter of choice, there is the possibility of introducing further advice to assist selection of a manageable number of statements.

19. In this paper four approaches are proposed to help to address the above problems: rationalisation/reduction in the overall number of PS, suggestions for further combined PS, further guidance for selection of PS for a given context, and partial alignment of the PS groupings with the headings for safety data sheets.

20. Although we believe these proposals provide valuable help in improving the PS, we recognise that they do not fully resolve the issues identified in paragraph 16 above. To enable further progress a more radical approach may be needed, and two possible further approaches are tentatively suggested. At this stage these are presented merely for initial consideration, and we invite the views of UNSCEGHS as to whether further work on them would be worth pursuing.

Initial approaches to improving the usability of PS

A. *Rationalisation/reduction in the number of PS*

21. A number of suggestions are made in Annex 3 to this paper to reduce the overall number of PS, together with some other editorial improvements. The general principle adopted has been to propose the use of a single statement in cases where more than one statement recommends very similar or identical precautionary measures, or to propose shorter or simpler statements where possible.

22. By way of example, the current list of PS includes six statements recommending that a user seek medical attention in different circumstances:

<table>
<tr><th></th><th>Current precautionary statements</th><th></th><th>Proposed precautionary statements</th></tr>
<tr><td>P310</td><td>Immediately call a POISON CENTER or doctor/physician</td><td>P313</td><td>Get medical advice/attention</td></tr>
<tr><td>P311</td><td>Call a POISON CENTER or doctor/physician</td><td>P314</td><td>Get medical advice/attention if you feel unwell</td></tr>
<tr><td>P312</td><td>Call a POISON CENTER or doctor/physician if you feel unwell</td><td>P315</td><td>Get immediate medical advice/attention</td></tr>
<tr><td>P313</td><td>Get medical advice/attention</td><td></td><td></td></tr>
<tr><td>P314</td><td>Get medical advice/attention if you feel unwell</td><td></td><td></td></tr>
<tr><td>P315</td><td>Get immediate medical advice/attention</td><td></td><td></td></tr>
</table>

23. Although phrased slightly differently, the basic advice being given here – to seek medical attention – is the same in relation to P310-P312 and P313-P315, with differences among these two groups of statements indicating different degrees of urgency. Moreover, the appropriate source of medical advice will differ in different jurisdictions – 'call a Poison Centre' is only applicable in those jurisdictions where Poison Centres take calls from members of the public. Therefore stating particular sources of medical advice in some PS risks complicating the selection of appropriate PS.

24. It is therefore proposed that the three statements P313-P315 are used to cover all cases where the basic advice is to seek medical advice or attention. The proposal would be that P313-P315 would 'take over' the classes and categories which are currently assigned P310-P312 – so P313 would cover both the hazard classes and categories currently assigned P310 as well as those currently assigned P313; P314 would cover the hazard classes for P311 as well as P314, and P315 those for P312 as well as P315. Reference to Poison Centres or other sources of medical advice or attention can, where required, be made in the supplementary information section of the label (as suggested in A3.3.2.3).

25. The advantages of this rationalisation would be two-fold: first to reduce the overall number of PS – and second, to avoid any confusion which could arise from differences in instructions about the type of medical attention to be obtained in different situations.

26. A number of similar rationalisations are proposed in Annex 3. The explanation of these rationalisations is given adjacent to each relevant statement in the annex.

B. *Guidance for selection of PS*

27. Currently in the GHS the selection of PS is left largely to the manufacturer or supplier with little specific guidance as to which statements might be appropriate in a given context. While the discretionary nature of the PS should continue, it is proposed that further guidance – in particular under the heading "**conditions for use**" in the tables in Section 2 of Annex 3 of the GHS – could be included in GHS to aid selection of appropriate statements.

28. In this paper, we make one suggestion of this type: namely, to indicate in the table in Section 2 of Annex 3 when statements are primarily appropriate for <u>workplace</u> or for <u>consumer</u> use, so that manufacturers or suppliers marketing substances or mixtures to one or other of these groups can more quickly exclude statements which might be less appropriate for a given situation.

29. This suggestion follows the categorization of target audiences for the GHS in Section **1.4.3**, where the workplace and consumers are listed as two of the major audiences for the GHS. Also listed are emergency responders and transport audiences: however emergency and transport (in contrast to consumers and workplace audiences) would not generally have distinct sets of products supplied to them – they will largely encounter products aimed primarily either at workers or consumers – so there will be no statements suitable for products 'only' for emergency response or transport use.

30. It is suggested that italicized text in the 'conditions for use' column in tables A3.2.1-A3.2.5 is used to indicate which statements are primarily for consumer products or for workplace use. Statements appropriate for consumer products are currently indicated in table A3.2.1, and the text '- *primarily for workplace use'* could be used to indicate the statements recommended for workplace use in tables A3.2.2-A3.2.5.

31. Annexes 3 and 4 to this paper make suggestions as to which statements are for consumer/workplace use. The selection of PS as suitable for either consumer or workplace use has been made primarily on the basis of the nature of the statement itself, rather than consideration of the type of product on which it might be used. The broad criteria used in making this distinction have been a) whether a consumer

is likely to understand a given statement; and b) whether they are likely to be in a position to put the precautionary measure it recommends into practice. For example, P242, 'Use only non-sparking tools' and P240, 'Ground/bond container and receiving equipment' are both suggested as primarily for workplace use, since it is unlikely that many consumers would understand exactly what is required by either statement, or be able to put them into practice. Feedback is welcomed on whether the suggested allocations are correct.

32. As with Annex 3 in general, the indication of consumer or workplace use would not be definitive, and suppliers could still use a 'consumer' phrase for the workplace, or a 'workplace' phrase for the consumer, if considered appropriate. However the 'consumer'/'workplace' indication would provide a useful initial sift.

C. Combination of precautionary statements

33. Currently there is scope for further combining PS in order to reduce the amount of text required on labels. A number of suggestions are made for further combined PS at the end of each table in Annex 4 to this paper.

34. Two criteria have been invoked for proposing a combined PS. The first is that the combined statement should be shorter than the sum of the individual statements being combined. The second is that there is at least one hazard class to which all the combined statements apply. The GHS allows for further combinations of PS where appropriate (see A3.3.2.3) but combined statements would not be suitable for inclusion in the tables in section 2 of Annex 3 at present where they have no hazard classes in common (even though they may both apply to a single product), so these have not been included in this paper. (N.B. the proposals for combined PS assume the revised list of single PS as proposed in Annexes 3 and 4.)

35. Two examples are as follows:

(a) The following PS are assigned to self-reactive substances and mixtures in categories A-F:

P233 **Keep ~~container tightly closed~~ <u>in a tightly closed container</u>**
P234 **Store only in original container**

However, these could be combined into the statement:

Keep tightly closed in original container only

(b) For self-reactive substances and mixtures, the following statements are assigned:

P223 **Keep away from any possible contact with water, because of violent reaction and possible flash fire**
P232 **Protect from moisture**

These could be combined to:

Keep away from any possible contact with water or moisture because of violent reaction and possible flash fire.

D. Re-grouping of precautionary statements

36. Currently PS are grouped into 4 categories:

Prevention
Response
Storage
Disposal

However, it is suggested that the statements are re-grouped into the following four categories, to bring the groupings closer to the Safety Data Sheet headings set out in Section 1.5.3.2.1, thereby bringing more coherence between the safety advice on the label and in the safety data sheet.

	Correlation with SDS heading(s)
Handling and storage	7
Response	4,5,6
Exposure Control/ personal protection	8
Disposal	13

37. Allocation of statements to the new groupings – handling and storage and exposure control/personal protection – has been informed by the guidance given in Table 1.5.2 of the GHS on the contents of these sections of safety data sheets. According to this guidance 'handling and storage' covers a) Precautions and safe handling' and b) conditions for safe storage'; whereas 'exposure control/personal protection' covers a) control parameters, e.g. occupational exposure limit value or biological limit values, b) Appropriate engineering controls and c) individual protection measures, such as personal protection measures.

38. Generalising this somewhat, it is assumed here that 'exposure control/personal protection' covers those measures aimed at reducing or preventing personal exposure to (mainly) health hazards, whereas 'handling and storage' will cover any other advice on safe handling or storage.

39. For example, P262: Do not get in eyes, on skin, or on clothing, and P264: **Wash … thoroughly after** handling are considered to fall into the exposure control/ personal protection grouping – as they are precautions aimed at reducing personal exposure to health hazards. However P243: **Take precautionary measures against static discharge**, P234: **Keep only in original** container, and P230: **Keep wetted with…** are assumed to be handling/storage statements, since they relate to other aspects of safe handling and storage.

40. There are two advantages to the proposed new groupings for PS.

(a) Closer alignment with the safety data sheet headings in section 1.5.3.2.1 will enable easier cross-referencing between the label and the safety data sheet (in cases where SDS are provided). This should enable improved hazard communication and reduce the potential for confusion between the two sources of precautionary advice.

(b) Re-grouping allows for rationalisation of PS in cases where very similar statements are currently included in both prevention and storage categories. For example, the list of PS currently includes:

P220 (Prevention): **Keep/store away from clothing/…/combustible materials**
P420 (Storage): **Store away from other materials**

The advice given in each case above is very similar, to keep or store the substance or mixture away from other materials (potentially to be specified by the manufacturer). Under the proposed headings, both of these statements would be classed as 'handling/storage' statements, and therefore could be replaced by a single statement:

PXXX (Handling/storage): **Keep/Store away from clothing/…/ combustible materials/other materials.**

41. It is worth mentioning here that it is proposed to maintain both the terms 'store' and 'keep' even when statements containing them are combined. We suggest that 'keep' should be used to refer to a precaution that should be adhered to at all times – or at least whenever possible – whereas 'store' would refer only to a condition that should be maintained when the product is in storage or not in use. The manufacturer/supplier could then be given the option (indicated by the forward slash, '/') to use the more appropriate term – with guidance as to application in the 'conditions for use' column.

42. Proposals for revisions to the PS are set out in Annex 3. Annex 4 contains the versions of tables A3.2.1, A3.2.2 and A3.3.3 which would result from making the proposed changes, including the new proposed combined PS.

Further approaches to reducing the number of PS appearing on labels

43. As noted earlier, it is acknowledged that while the suggestions presented above should be helpful in reducing the amount of PS which appear on labels, they will only go so far, and a more radical approach may be needed in order to achieve more. Two tentative suggestions – which have not yet been fully developed – are noted here with further detail in Annex 6 to this paper as a 'thought provoker'. The view of UNSCEGHS would be welcomed as to whether further work on these ideas would be worth pursuing.

(a) 'Signpost' statements

44. The current approach of the GHS is to assume that labels should contain all the precautionary advice needed by users of the relevant products. However, an alternative approach would be in some cases to use labels not as a direct means to communicating all required precautionary information, but as 'signposts' to more detailed precautionary advice. Such advice could be contained, for example, in a safety data sheet or other instructions supplied with the product.

(b) Order of 'preference' for PS

45. Currently, if the GHS ascribes a range of PS to a product, each PS has equal 'status', in that none is explicitly preferred over any other for inclusion on the label. However, the idea is hinted at in section A3.3.4.6 that a hierarchy or order of preference could be applied to a given set of PS when several are triggered, recommending which statements in the group are most important for inclusion. If this idea could be developed further, it could enable more detailed guidance to be given on selection of a manageable number of PS. Two examples of this are given in Annex 6 to this document.

Changes to the text of the GHS

46. If agreed, the approaches presented in this paper, would lead to a number of changes to the GHS. Some of these are indicated in this paper. First, changes will be required to tables A3.2.1-A3.2.4 (codifying the PS) to reflect the new PS. The resulting changes are given in Annex 4 to this paper. Second, a number of changes would also be required to the text of the GHS in Chapter 1.4, and to the introduction to Annex 3, sections 1 and 2. These are listed in Annex 5 to this paper.

47. In addition to the changes indicated, the combined hazard statements proposed in Annex 3 to this paper would need to be added to table A3.1.1, and the matrices in section A3.3.5 would need to be updated in line with the new PS. However these changes have not been included in this document.

Workstream 2 – general improvement of Annexes 1 to 3

48. It was agreed at the July 2007 meeting of UNSCEGHS that, although priority should be given to Workstream 1, the correspondence group should also take forward work on Workstream 2, to improve the presentation of Annexes 1 to 3 of the GHS.

49. Work on Workstream 2 will be taken forward further once work is complete on Workstream 1.

Action

50. UNSCEGHS is invited to:

(a) comment as needed on the approaches to combined hazard statements as summarised in Annex 1

(b) comment on the four approaches to improve the PS set out in paragraphs 16 to 44 and in Annexes 3 and 4.

(c) consider the merits of the two further proposals for reducing the number of PS appearing on the label noted in paragraphs 45 to 47, and in Annex 6.

Next steps

51. Subject to the view of UNSCEGHS, the correspondence group will prepare a formal paper to present to UNSCEGHS at the December meeting, putting forward proposals for the rationalisation of the current hazard and PS, together with proposals for the group to continue its work into the next biennium.

Annex 1

Proposed combination hazard statements

Acute toxicity			
Fatal if swallowed Fatal in contact with skin	**H300** **H310**	**Fatal if swallowed or in contact with skin**	**H300 +** **H310**
Fatal if swallowed Fatal if inhaled	**H300** **H330**	**Fatal in contact with skin or if inhaled**	**H310 +** **H330**
Fatal in contact with skin Fatal if inhaled	**H310** **H330**	**Fatal in contact with skin or if inhaled**	**H310 +** **H330**
Fatal if swallowed Fatal in contact with skin Fatal if inhaled	**H300** **H310** **H330**	**Fatal if swallowed, in contact with skin or if inhaled**	**H300 +** **H310 +** **H330**
Toxic if swallowed Toxic in contact with skin	**H301** **H311**	**Toxic if swallowed or in contact with skin**	**H301 +** **H311**
Toxic if swallowed Toxic if inhaled	**H301** **H331**	**Toxic in contact with skin or if inhaled**	**H301 +** **H331**
Toxic in contact with skin Toxic if inhaled	**H311** **H331**	**Toxic in contact with skin or if inhaled**	**H311 +** **H331**
Toxic if swallowed Toxic in contact with skin Toxic if inhaled	**H301** **H311** **H331**	**Toxic if swallowed, in contact with skin or if inhaled**	**H301 +** **H311 +** **H331**
Harmful if swallowed Harmful in contact with skin	**H302** **H312**	**Harmful if swallowed or in contact with skin**	**H302 +** **H312**
Harmful if swallowed Harmful if inhaled	**H302** **H332**	**Harmful in contact with skin or if inhaled**	**H302 +** **H332**
Harmful in contact with skin Harmful if inhaled	**H312** **H332**	**Harmful in contact with skin or if inhaled**	**H312 +** **H332**
Harmful if swallowed Harmful in contact with skin Harmful if inhaled	**H302** **H312** **H332**	**Harmful if swallowed, in contact with skin or if inhaled**	**H302 +** **H312 +** **H332**
May be harmful if swallowed May be harmful in contact with skin	**H303** **H313**	**May be harmful if swallowed or in contact with skin**	**H303 +** **H313**
May be harmful if swallowed May be harmful if inhaled	**H303** **H333**	**May be harmful in contact with skin or if inhaled**	**H303 +** **H333**
May be harmful in contact with skin May be harmful if inhaled	**H313** **H333**	**May be harmful in contact with skin or if inhaled**	**H313 +** **H333**
May be harmful if swallowed May be harmful in contact with skin May be harmful if inhaled	**H303** **H313** **H333**	**May be harmful if swallowed, in contact with skin or if inhaled**	**H303 +** **H313 +** **H333**
Skin, eye and respiratory irritation			
Causes skin irritation Causes eye irritation	H315 H320	**Causes skin and eye irritation**	**H315 +** **H320**
Skin and respiratory sensitisation			
May cause an allergic skin reaction May cause allergy or asthma symptoms or breathing difficulties if inhaled	H317 H334	**May cause an allergic skin reaction, and [allergy or] asthma symptoms if inhaled**	**H317 +** **H334**

Annex 2

GHS label for butanone

HAZARD PICTOGRAMS


SIGNAL WORD Danger

HAZARD STATEMENTS
H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.
H336 May cause drowsiness or dizziness.

PRECAUTIONARY STATEMENTS
P210 Keep away from heat, sparks, open flames. – No smoking
P235 Keep cool.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical equipment.
P242 Use only non-sparking tools.
P243 Take Precautionary measures against static discharge.
P271 Use only outdoors or in a well ventilated area

P403/P235 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.

P261 Avoid breathing vapours.
P280 Wear protective gloves and eye protection.
P264 Wash thoroughly after handling.
P370/P378 In case of fire: Use foam, powder, CO2 or water spray.
P303/P361/P353 IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower.
P305/P351/P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337/P313 If eye irritation persists: Get medical attention.
P304/P340 IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing
P312 Call a POISON CENTER or doctor/physician if you feel unwell.

P501 Dispose of contents and container in accordance with Hazardous Waste Regulations.

Annex 3

Proposed changes to precautionary statements

Code	Statement	Issue	Proposed change	Workplace/ Consumer use
P101	If medical advice is needed, have product container or label at hand	None	None	C
P102	Keep out of reach of children	None	None	C
P103	Read label before use	Redundant – odd advice	Replace with: **Read safety information before use**	
P201 P202	Obtain special instructions before use Do not handle until all safety precautions have been read and understood.	Not clear, and seems to be redundancy between the statements.	Replace with: **Do NOT handle until all safety precautions have been read and understood** Move statement to 'general precautionary statements'	WP/C
P210	Keep away from heat/sparks/open flames/hot surfaces. – No smoking.	None	Move to 'handling/storage' statements	WP/C
P211	Do not spray on an open flame or other ignition source	None	Move to 'handling/storage' statements	WP/C
P220 P420	Keep/store away from clothing/…/combustible materials Store away from other materials	Apparent redundancy, though P220 is prevention, and P420 Storage at present.	Replace by single statement: **Keep/Store away from clothing/…/other materials/combustible materials.** Move to Handling/Storage statements. Manufacturer to specify incompatible materials and whether 'keep' or 'store'. -*'keep' should be used where temperature should never be exceeded* -*'store' should be used where temperature should only not be exceeded in storage.*	WP
P221	Take any precaution to avoid mixing with combustibles/…	'any' is not clear	Replace with: **Do not allow to mix with combustibles** Move to 'handling/storage' statements	WP
P222	Do not allow contact with air	None	Move to 'handling/storage' statements	WP
P223	Keep away from any possible contact with water, because of violent reaction and possible flash fire	None	Move to 'handling/storage' statements	WP
P230	Keep wetted with…	None	Move to 'handling/storage' statements	WP
P231 P422	Handle under inert gas Store contents under…	Redundancy, though at present P231 is prevention and P422 is storage	Replace with: **Handle/ store under…** Move to handling/ storage statements. 'Handle' or 'store' should be used as appropriate, depending on classification – 'handle' for substances and mixtures which, in contact with water, emit flammable gases; 'store' for pyrophoric liquids and solids.	WP WP
P232	Protect from moisture	None	Move to 'handling/storage' statements	WP/C
P233	Keep container tightly closed	Redundancy, though	Replace with P233 **Keep in a tightly closed container.**	WP/**C**

Code	Statement	Issue	Proposed change	Workplace/ Consumer use
P404	Store in a closed container	P233 is prevention and P404 is storage. In some cases, (e.g. Acute toxicity, inhalation cat 1) P233 comes under storage as combination statement P403+P233	Move to handling/ storage section.	
P234	Keep only in original container	None	Move to 'handling/storage' statements	WP/C
P235	Keep cool	None	Move to 'handling/storage' statements	WP/C
P240	Ground/bond container and receiving equipment	None	Move to 'handling/storage' statements	WP
P241	Use explosion-proof electrical/ventilating/lighting/… equipment	None	Move to 'handling/storage' statements	WP
P242	Use only non-sparking tools	None	Move to 'handling/storage' statements	WP
P243	Take precautionary measures against static discharge	None	Move to 'handling/storage' statements	WP
P244	Keep reduction valves free from grease and oil.	None	Move to 'handling/storage' statements	WP
P250	Do not subject to grinding/shock/friction	None	Move to 'handling/storage' statements	WP
P260 P261	Do not breathe dust/fume/gas/mist/ vapours/spray Avoid breathing dust/fume/gas/mist/ vapours/spray	Redundancy – same action required. 'Avoid creating dust' etc. would also be more appropriate in some situations, where this is practicable.	Delete P261 – replace with single statement, Move to 'exposure control/personal protection' statements. **Avoid creating/ Do not breathe dust/fume/gas/mist/vapours/ spray.** Manufacturer supplier should specify practicable precaution as well as applicable conditions. Move to 'exposure control/personal protection' statements.	WP/C
P262	Do not get in eyes, on skin, or on clothing	None	Move to 'exposure control/personal protection' statements.	WP/C
P263	Avoid contact during pregnancy/ while nursing	None	Move to 'exposure control/personal protection' statements.	WP
P264	Wash… thoroughly after handling	None	Move to 'exposure control/personal protection' statements.	WP/C

Code	Statement	Issue	Proposed change	Workplace/ Consumer use
P270	Do not eat/drink or smoke when using this product	None	Move to 'exposure control/personal protection' statements.	WP/C
P271	Use only outdoors in a well-ventilated area	None	Move to 'exposure control/personal protection' statements.	WP/C
P272	Contaminated work clothing should not be allowed out of the workplace.	None	Move to 'exposure control/personal protection' statements.	WP
P273	Avoid release to the environment	None	Move to 'exposure control/personal protection' statements.	WP/C
P280 P281 P282 P283	Wear protective gloves/protective clothing/eye protection/face protection Use personal protective equipment as required Wear cold insulating gloves/face shield/eye protection Wear fire/flame resistant/retardant clothing	Redundancy	Replace with one statement: **Wear protective gloves/protective clothing/face protection…** Manufacturer/supplier or the competent authority to specify appropriate personal protective equipment. Move to 'exposure control/personal protection' statements.	WP/C
P284 P285	Wear respiratory protection In case of inadequate ventilation wear respiratory protection	Redundancy. Also, not clear why P285 appropriate for respiratory sensitisers only rather than P284.	Replace with: **Wear respiratory protective equipment**. Move to 'exposure control/personal protection' statements.	WP
P301 P302 P303 P304 P305 P306 P307 P308 P309	IF SWALLOWED: IF ON SKIN: IF ON SKIN (or hair): IF INHALED: IF IN EYES: IF ON CLOTHING: IF exposed: IF exposed or concerned: IF exposed or if you feel unwell:	Some redundancy e.g. P307-P309 and P302/P303	Delete P302 (use P303 instead). Delete P307 and P309 and use only: **IF exposed or concerned:**	WP/C

Code	Statement	Issue	Proposed change	Workplace/ Consumer use
P310 P311 P312 P313 P314 P315	Immediately call a POISON CENTER or doctor/physician Call a POISON CENTER or doctor/physician Call a POISON CENTER or doctor/physician if you feel unwell Get medical advice/attention Get medical advice/attention if you feel unwell Get immediate medical advice/attention	Redundancy, esp as regards 310-312 and 313-315. Not all jurisdictions have Poison Centres which can be called by workers/ members of the public – 'get medical advice/ attention' is more widely applicable. Reference to Poison Centres can be included in supplementary information on the label where appropriate (see A3.3.2.3)	Use only: P313 **get medical advice/attention,** P314 **Get medical advice/attention if you feel unwell, and** P315 **get ~~immediate~~ medical advice/attention <u>immediately</u>.**	WP/C
P320 P321 P322	Specific treatment is urgent (see … on this label) Specific treatment (see … on this label) Specific measures (see … on this label)	Redundancy. Urgency will be indicated by P310 and P311 – i.e. P320 only applies to acute tox cat 1, 2 – this is also given P310. No real difference between 'treatment' and 'measures'.	Replace with **specific treatment (see … on this label).**	WP/C
P330	Rinse mouth	None	None	WP/C
P331	Do NOT induce vomiting	None	None	WP/C
P332 P333	If skin irritation occurs If skin irritation or rash occurs	P332 is redundant	Replace with: P333 **If skin irritation or rash occurs**	WP/C
P334	Immerse in cool water/wrap in wet bandages	None	None	WP/C
P335	Brush off loose particles from skin	None	None	WP/C
P336	Thaw frosted parts with lukewarm water.	None	None	WP/C

Code	Statement	Issue	Proposed change	Workplace/ Consumer use
	Do not rub affected area.			
P337	If eye irritation persists:	None	None	WP/C
P338	Remove contact lenses, if present and easy to do. Continue rinsing.	None	None	WP/C
P340 P341 P342	Remove victim to fresh air and keep at rest in a position comfortable for breathing If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. If experiencing respiratory symptoms:	P341 and P342 only apply to respiratory sensitisation, and the content can better be expressed in a combined precautionary statement which doesn't use P342. The word 'victim' is not ideal in this context.	Delete P342 (see combined statement P304 + P341 + P311)	WP/C
P350 P351 P352 P353	Gently wash with plenty of soap and water. Rinse cautiously with water for several minutes. Wash with plenty of soap and water Rinse skin with water/shower	Redundancy – though P351 should be kept separate as applies specifically to eyes.	Replace with: **wash with plenty of soap/water/…** Manufacturer/supplier or the competent authority to specify cleansing agent.	
P360	Rinse immediately contaminated clothing and skin with plenty of water before removing clothes	None	None	WP/C
P361 P362 P363	Remove/take off immediately all contaminated clothing Take off contaminated clothing and wash before reuse. Wash contaminated clothing before reuse.	Redundancy	Replace P361-P363 with: **P361: ~~Remove~~/Take off immediately all contaminated clothing** **P363: Wash contaminated clothing before re-use.**	WP/C
P370	In case of fire:	None	None	WP/C
P371	In case of major fire and large quantities	None	None	WP
P372	Explosion risk in case of fire	None	None	WP/C
P373	DO NOT fight fire when fire reaches explosives	None	None	WP/C
P374	Fight fire with normal precautions from a reasonable distance.	None	None	WP /C
P375	Fight fire remotely due to risk of explosion	None	None	WP/C
P376	Stop leak if safe to do so	None	None	WP/C

Code	Statement	Issue	Proposed change	Workplace/ Consumer use
P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely	None	None	WP
P378	Use… for extinction	None	None	WP/C
P380	Evacuate area	None	None	WP
P381	Eliminate all ignition sources if safe to do so	None	None	WP
P390	Absorb spillage to prevent material-damage	None	None	WP
P391	Collect spillage	None	None	WP/C
P401	Store…	None	None (conditions for use refers to local/national regulations). Move to 'handling/storage' statements	WP/C
P402	Store in a dry place	None	Move to 'handling/storage' statements	WP/C
P403	Store in a well-ventilated place	None	Move to 'handling/storage' statements	WP/C
P404	Store in a closed container	Redundancy with P233	Delete – see P233.	WP/C
P405	Store locked up	None	Move to 'handling/storage' statements.	WP/C
P406	Store in corrosive resistant/…container with a resistant inner liner.	None	Move to 'handling/storage' statements	WP
P407	Maintain air gap between pallets	None	Move to 'handling/storage' statements	WP
P410	Protect from sunlight	None	Move to 'handling/storage' statements	WP/C
P411 P412	Store at temperatures not exceeding …°C/…°F Do not expose to temperatures exceeding 50°C/122°F	Redundancy. Ambiguity between 'keep' – i.e. maintain at all times – and 'store' – i.e. only maintain during storage.	Replace with: P411: **keep/store at temperatures not exceeding …°C/…°F.** Manufacturer/supplier or the competent authority to specify appropriate temperature. -*'keep' should be used where temperature should never be exceeded* -*'store' should be used where temperature should only not be exceeded in storage* Move to 'handling/storage' statements.	WP
P413	Store bulk masses greater than …kg/…lbs at temperatures not exceeding …°C/…°F	None	Move to 'handling/storage' statements	WP
P420	Store away from other materials	Redundancy (P220)	Delete – see P220	WP/C
P422	Store contents under…	Redundancy (P231)	Delete – see P422	WP
P501	Dispose of contents/container to…	None	None	WP/C

Annex 4

Proposed changes to tables A3.2.1, A3.2.2, A3.2.3, A3.2.4[1]

[1] *Throughout, additions are indicated in* ***bold underlined text****, and deletions in* ~~*strikethrough*~~*.*

Table A3.2.1 Codification of general precautionary statements

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P101	**If medical advice is needed, have product container or label at hand.**	As appropriate		Consumer products
P102	**Keep out of reach of children**	As appropriate		Consumer products
P103	**Read ~~label~~ safety information before use**	As appropriate		Consumer products
P104	**Do NOT use until all safety precautions have been read and understood.**	**As appropriate**		**Consumer products**

Table A3.2.2 Codification of ~~prevention~~ handling/storage precautionary statements

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
~~P201~~	~~**Obtain special instructions before use**~~			
~~P202~~	~~**Do not handle until all safety precautions have been read and understood**~~			
P210	**Keep away from heat/sparks/open flames/hot surfaces. – No smoking.**	No change		
P211	**Do not spray on an open flame or other ignition source**	No change		
P220	**Keep/store away from clothing/…/other materials/combustible materials.**	Oxidizing gases	1	Manufacturer/supplier or the competent authority to specify other incompatible materials. ***- Primarily for workplace use***
		Self-reactive substances and mixtures	Types A-F	
		Oxidizing liquids	2,3	
		Oxidizing solids	2,3	
		Organic peroxides	Types A-F	
		Oxidizing liquids	1	*Specify to keep away from clothing and other combustible materials.* ***- Primarily for workplace use***
		Oxidizing solids	1	
		Self-heating substances and mixtures	**Types A-F**	***- Primarily for workplace use***
P221	~~Take any precaution to avoid mixing with combustibles~~ **Do not allow to mix with combustibles/…**	Oxidizing liquids	1, 2, 3	Manufacturer/supplier or the competent authority to specify other incompatible materials. ***- Primarily for workplace use***
		Oxidising solids	1, 2, 3	
P222	Do not allow contact with air	No change		***- Primarily for workplace use***

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P223	Keep away from any possible contact with water, because of violent reaction and possible flash fire	No change		***- Primarily for workplace use***
P230	Keep wetted with…	No change		***- Primarily for workplace use***
P231	**Handle/store under…~~inert gas~~**	Substances and mixtures which, in contact with water, emit flammable gases	1,2,3	Manufacturer/supplier or the competent authority to specify appropriate inert gas. ***- 'handle' should be used*** ***- Primarily for workplace use***
		Pyrophoric liquids	**1**	**Manufacturer/supplier or the competent authority to specify appropriate liquid or inert gas.** ***-'store' should be used.*** ***- Primarily for workplace use***
		Pyrophoric solids	**1**	
P232	**Protect from moisture**	No change		
P233	**Keep ~~container tightly closed~~ in a tightly closed container**	Flammable liquids	1,2,3	
		Acute toxicity, inhalation	1,2,3	*- if product is volatile so as to generate hazardous atmosphere*
		Specific target organ toxicity, single exposure; respiratory tract irritation	3	
		Specific target organ toxicity, single exposure; narcotic effects.	3	
		Substances and mixtures which, in contact with water, emit flammable gases	**1,2,3**	
P234	~~Keep~~ **Store** only in original container	No change		
P235	Keep cool	No change		
P240	Ground/bond container and receiving equipment	No change		***- Primarily for workplace use***
P241	Use explosion-proof electrical/ventilating/lighting/… equipment	No change		***- Primarily for workplace use***
P242	Use only non-sparking tools	No change		***- Primarily for workplace use***

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P243	Take precautionary measures against static discharge	No change		***- Primarily for workplace use***
P244	Keep reduction valves free from grease and oil.	No change		***- Primarily for workplace use***
P250	Do not subject to grinding/shock/friction	No change		***- Primarily for workplace use***
P251	Pressurized container: Do not pierce or burn, even after use.	No change		
P401[2]	Store…	No change		
P402	Store in a dry place	No change		
P403	Store in a well-ventilated place	No change		
~~P404~~	~~Store in a closed container~~			
P405	Store locked up	No change		
P406	Store in corrosive resistant/…container with a resistant inner liner.	No change		
P407	Maintain air gap between pallets	No change		***- Primarily for workplace use***
P410	Protect from sunlight	No change		
P411	~~Store~~ **Keep/store** at temperatures not exceeding …°C/…°F	Self-reactive substances and mixtures	Types A-F	**Manufacturer/supplier or the competent authority to specify the appropriate temperature.** ***-'keep' should be used where temperature should never be exceeded -'store' should be used where temperature should only not be exceeded in storage.***
		Organic peroxides	Types A-F	
		Flammable aerosols	**1,2**	
~~P412~~	~~Do not expose to temperatures exceeding 50°C/122°F~~			
P413	Store bulk masses greater than …kg/…lbs at temperatures not exceeding …°C/…°F	No change		***- Primarily for workplace use***
~~P420~~	~~Store away from other materials~~			
~~P422~~	~~Store contents under…~~			

[2] *For present purposes, numbering has been kept as at present for statements which are retained from current GHS in the same or edited form. However if the proposals for re-grouping the statements are taken up, statements P401 – P413 would have to be renumbered in the form P2… to make clear that they are now located in Table **A3.2.2**.*

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P402 + ~~P404~~ P233	Store in a dry place. Keep **in a** ~~container~~ tightly closed container	Substances and mixtures which, in contact with water, emit flammable gases	1,2,3	
P403 + P233	Store in a well-ventilated place. Keep **in a** ~~container~~ tightly closed **container**.	Acute toxicity, inhalation	1,2,3	
		Specific target organ toxicity, single exposure; respiratory tract irritation	3	
		Specific target organ toxicity, single exposure; narcotic effects.	3	
P403 + P235	Store in a well-ventilated place. Keep cool.	No change		
P410 + P403	Protect from sunlight. Store in a well-ventilated place.	No change.		
P410 + ~~P412~~ P411	Protect from sunlight. ~~Do not expose to temperatures exceeding 50°C/122°F~~ **Keep/store at temperatures not exceeding …°C/…°F**	Flammable aerosols	1,2	**Manufacturer/supplier or the competent authority to specify the appropriate temperature.** ***-'keep' should be used where temperature should never be exceeded -'store' should be used where temperature should only not be exceeded in storage.***
P411 + P235	~~Store~~ **Keep/store** at temperatures not exceeding …°C/…°F. Keep cool.	Organic Peroxides	Types A-F	**Manufacturer/supplier or the competent authority to specify the appropriate temperature.** ***-'keep' should be used where temperature should never be exceeded -'store' should be used where temperature should only not be exceeded in storage.***

Additional suggestions for combined precautionary statements

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P234 + P235 + P403	Store only in original container in a cool, well-ventilated place	Self-reactive substances and mixtures	Types A, B, C, D, E, F	
P210 + P220	Keep away from heat/sparks/open flames/hot surfaces/and from clothing/…/combustible materials/other materials. – No Smoking	Oxidizing liquids	1	
		Oxidizing solids	1	
P220 + P411 + P235	Keep away from heat/sparks/open flames/hot surfaces/and from clothing/…/combustible materials/other materials. – No Smoking. Keep cool at temperatures not exceeding …°C/…°F.	Self-reactive substances and mixtures	Types A, B, C, D, E, F	
		Organic peroxides	Types A, B, C, D, E, F	
P233 + P234	Keep tightly closed in original container only.	-		
P223 + P232	Keep away from any possible contact with water or moisture because of violent reaction and possible flash fire.	Substances and mixtures which, in contact with water, emit flammable gases	1, 2, 3	
P405 + P102	Keep locked up and out of reach of children	Acute toxicity, oral	1, 2, 3	As appropriate within these hazard categories
		Acute toxicity, dermal	1, 2, 3	
		Acute toxicity, inhalation	1, 2, 3	
		Skin corrosion	1A, 1B, 1C	
		Germ cell mutagenicity	1A, 1B, 2	
		Carcinogenicity	1A, 1B, 2	
		Reproductive toxicity	1A, 1B, 2	
		Specific target organ toxicity, single exposure	1, 2	
		Specific target organ toxicity, single exposure; respiratory tract irritation	3	
		Specific target organ toxicity, single exposure; narcotic effects	3	
		Aspiration hazards	1,2	
P410 + P411	Keep/store away from sunlight at temperatures not exceeding …°C/…°F	Organic peroxides	Types A, B, C, D, E, F	
P403 + P411	Keep/store in a well-ventilated place at temperatures not exceeding …°C/…°F.	Self-reactive substances and mixtures	Types A, B, C, D, E, F	

Table A3.2.3 Codification of response precautionary statements

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P301	**IF SWALLOWED:**	No change		
~~P302~~	~~**IF ON SKIN:**~~			
P303	**IF ON SKIN (or hair):**	Pyrophoric liquids	1	
		Acute toxicity, dermal	1,2,3,4	
		Skin irritation	2	
		Skin sensitization	1	
		Flammable liquids	1,2,3	
		Skin corrosion	1A, 1B, 1C	
P304	**IF INHALED:**	No change		
P305:	**IF IN EYES:**	No change		
P306:	**IF ON CLOTHING:**	No change		
~~P307~~	~~**IF exposed:**~~			
P308:	**IF exposed or concerned:**	**Specific target organ toxicity, single exposure**	**1,2**	
		Germ cell mutagenicity	1A, 1B, 2	
		Carcinogenicity	1A, 1B, 2	
		Reproductive toxicity	1A, 1B, 2	
		Reproductive toxicity, effects on or via lactation	Additional category	
		Specific target organ toxicity, single exposure	**2**	
P309	~~**IF exposed or if you feel unwell:**~~			
~~P310~~	~~**Immediately call a POISON CENTER or doctor/physician.**~~			
~~P311~~	~~**Call a POISON CENTER or doctor/ physician**~~			
~~P312~~	~~**Call a POISON CENTER or doctor/physician if you feel unwell**~~			

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P313	**Get medical advice/attention**	Acute toxicity, inhalation	3	
		Respiratory sensitization	1	
		Specific target organ toxicity, single exposure	1,2	
		Acute toxicity, oral	4,5	
		Acute toxicity, dermal	3,4,5	
		Acute toxicity, inhalation	4,5	
		Specific target organ toxicity, single exposure; respiratory tract irritation	3	
		Specific target organ toxicity, single exposure; narcotic effects	3	
		Skin irritation	**2,3**	
		Eye irritation	**2A, 2B**	
		Skin sensitization	**1**	
		Germ cell mutagenicity	**1A,1B,2**	
		Carcinogenicity	**1A, 1B, 2**	
		Reproductive toxicity	**1A, 1B, 2**	
		Reproductive toxicity, effects on or via lactation	**Additional category**	
P314	**Get medical advice/attention if you feel unwell**	Specific target organ toxicity, repeated exposure	1,2	
P315	**Get ~~immediate~~ medical advice/attention immediately**	Acute toxicity, oral	1,2,3	
		Acute toxicity, dermal	1,2	
		Acute toxicity, inhalation	1,2	
		Skin corrosion	1A, 1B, 1C	
		Severe eye damage	1	
		Aspiration hazard	1,2	
		Gases under pressure	Refrigerated liquefied gas	
P320	**~~Specific treatment is urgent (see … on this label)~~**			

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P321	**Specific treatment (see … on this label)**	**Acute toxicity, inhalation**	**1,2,3**	
		Acute toxicity, oral	1,2,3	
		Skin corrosion	1A, 1B, 1C	
		Skin irritation	2	
		Skin sensitization	1	
		Specific target organ toxicity, single exposure	1	
		Acute toxicity, dermal	**1,2,3,4**	
~~P322~~	~~**Specific measures (see … on this label)**~~			
P330	**Rinse mouth**	No change		
P331	**Do NOT induce vomiting**	No change		
~~P332~~	~~**If skin irritation occurs:**~~			
P333	**If skin irritation or rash occurs:**	**Skin irritation**	**2,3**	
		Skin sensitisation	1	
P334	**Immerse in cool water/wrap in wet bandages**	No change		
P335	**Brush off loose particles from skin**	No change		
P336	**Thaw frosted parts with lukewarm water. Do not rub affected area**	No change		
P337	**If eye irritation persists:**	No change		
P338	**Remove contact lenses, if present and easy to do. Continue rinsing.**	No change		
P340	**Remove victim to fresh air and keep at rest in a position comfortable for breathing**	Acute toxicity, inhalation	1,2,3,4	
		Skin corrosion	1A, 1B, 1C	
		Specific target organ toxicity, single exposure; respiratory tract irritation	3	
		Specific target organ toxicity, single exposure; narcotic effects	3	

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P341	**If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing**	Respiratory sensitization	1	
~~P350~~	~~**Gently wash with plenty of soap and water**~~			
P351	**Rinse cautiously with water for several minutes.**	No change		
P352	**Wash with plenty of soap and water**	Acute toxicity, dermal	**1,2**,3,4	
		Skin irritation	2	
		Skin sensitization	1	
		Flammable liquids	**1,2,3**	
~~P353~~	~~**Rinse skin with water/shower**~~			
P360	**Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.**	Oxidizing liquids	1	
		Oxidizing solids	1	
P361	~~**Remove**~~ **Take off immediately all contaminated clothing**	Flammable liquids	1,2,3	
		Acute toxicity, dermal	1,2,3	
		Skin corrosion	1A, 1B. 1C	
		Skin irritation	**2**	
~~P362~~	~~**Take off all contaminated clothing and wash before re-use**~~			
P363	**Wash contaminated clothing before re-use**	**Skin irritation**	**2**	
		Acute toxicity, dermal	1,2,3,4	
		Skin corrosion	1A, 1B, 1C	
		Skin sensitization	1	
P370	In case of fire:	No change		
P371	In case of major fire and large quantities	No change		***- Primarily for workplace use***
P372	Explosion risk in case of fire	No change		
P373	DO NOT fight fire when fire reaches explosives	No change		
P374	Fight fire with normal precautions from a reasonable distance.	No change		
P375	Fight fire remotely due to risk of explosion	No change		
P376	Stop leak if safe to do so	No change		
P377	Leaking gas fire: Do not extinguish, unless leak can be stopped safely	No change		***- Primarily for workplace use***

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P378	Use… for extinction	No change		
P380	Evacuate area	No change		***- Primarily for workplace use***
P381	Eliminate all ignition sources if safe to do so	No change		***- Primarily for workplace use***
P390	Absorb spillage to prevent material-damage	No change		***- Primarily for workplace use***
P391	Collect spillage	No change		
P301+ ~~P310~~ **+ P315**	IF SWALLOWED: ~~immediately call a POISON CENTER or doctor/physician.~~ Get ~~immediate~~ medical advice/attention immediately.	Acute toxicity, oral	1,2,3	
		Aspiration hazard	1,2	
P301+ ~~P312~~ **P314**	IF SWALLOWED: ~~call a POISON CENTER or doctor/physician.~~ Get medical advice/attention if you feel unwell.	Acute toxicity, oral	4	
P301 + P330 + P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting	No change		
~~P302~~ **P303**+ P334	IF ON SKIN (or hair): Immerse in cool water/wrap in wet bandages.	No change		
~~P302~~ **P303**+ ~~P350~~ **P352**	IF ON SKIN **(or hair)**: ~~Gently~~ wash with plenty of soap/ water….	Acute toxicity, dermal	1,2	
		Acute toxicity, dermal	3,4	
		Skin irritation	2	
		Skin sensitization	1	
P303 + P361 + ~~P353~~ **P352**	IF ON SKIN (or hair): ~~Remove/~~ Take off immediately all contaminated clothing. ~~Rinse skin with water/shower~~. **Wash with plenty of soap/water…**	Flammable liquids	1,2,3	
		Skin corrosion	1A, 1B, 1C	
P304 + ~~P312~~ **P314**	IF INHALED: ~~Call a POISON CENTER or doctor/physician if you feel unwell~~ **get medical advice/attention if you feel unwell**	Acute toxicity, inhalation	5	

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.	No change		
~~P304 + P341~~	~~IF INHALED: if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.~~	~~No change~~		[See suggestions for new combined precautionary statements, P304 + P341 + P311]
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.	No change.		
P306 + P360	IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.	No change.		
~~P307~~ + ~~P311~~	~~If exposed: call a POISON CENTRE or doctor/physician~~	Specific target organ toxicity, single exposure	1	
P308 + P313	If exposed or concerned: get medical advice/attention	Germ cell mutagenicity	1A, 1B, 2	
		Carcinogenicity	1A, 1B, 2	
		Reproductive toxicity	1A, 1B, 1	
		Reproductive toxicity, effects on or via lactation	Additional category	
		Specific target organ toxicity, single exposure	**1,2**	
~~P309 + P311~~	~~If exposed or you feel unwell: call a POISON CENTER or doctor/physician.~~			
~~P332 + P313~~	~~If skin irritation occurs: Get medical advice/attention~~			
P333 + P313	If skin irritation or rash occurs: get medical advice/attention	Skin irritation	2,3	
		Skin sensitisation	**1**	
P335 + P334	Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages.	No change.		
P337 + P313	If eye irritation persists: Get medical advice/attention	No change		
~~P342 + P311~~	~~If experiencing respiratory symptoms: get medical advice/attention~~			[See suggestions for new combined precautionary statements, P304 + P341 + P311]
P370 + P376	In case of fire: Stop leak if safe to do so.	No change		***- Primarily for workplace use***

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P370 + P378	In case of fire: Use … for extinction	No change		
P370 + P380	In case of fire: evacuate area	No change		***- Primarily for workplace use***
P370 + P380 + P375	In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion	No change.		***- Primarily for workplace use***
P371 + P380 + P375	In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion.	No change.		***- Primarily for workplace use***

Additional suggestions for combined precautionary statements

P370 + P378 + P380 + P375	**In case of fire: evacuate area. Fight fire remotely due to risk of explosion. Use … for extinction**	**Self-reactive substances and mixtures**	**Types A, B**	***- Primarily for workplace use***
P370 + P380 + P372	**In case of fire: explosion risk. Evacuate area.**	**Explosives**	**Divisions 1.1, 1.2, 1.3, 1.4, 1.5**	***- Primarily for workplace use***
P304 + P341 + P311	**IF INHALED: if breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention.**	**Respiratory sensitizers**	**1**	

Table A3.2.4 Codification of exposure control/personal protection precautionary statements

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P260[3]	**Avoid creating/do not breathe dust/fume/gas/mist/vapours/spray**	Acute toxicity – inhalation	1,2,**3,4**	Manufacturer/supplier or the competent authority to specify **practicable precaution and** applicable conditions.
		Specific target organ toxicity, single exposure	1,2	
		Specific target organ toxicity, single exposure; respiratory tract irritation	**3**	
		Specific target organ toxicity, single exposure; narcotic effects	**3**	
		Specific target organ toxicity, repeated exposure	1,2	
		Skin corrosion	1A, 1B, 1C	- *specify do not breathe dusts or mists* - *if inhalable particles of dusts or mists may occur during use*
		Reproductive toxicity – effects on or via lactation	Additional category	
		Respiratory sensitization	**1**	Manufacturer/supplier or the competent authority to specify **practicable precaution and** applicable conditions.
		Skin sensitization	**1**	
~~P261~~	~~**Avoid breathing dust/fume/gas/mist/vapours/spray**~~			
P262	Do not get in eyes, on skin, or on clothing	No change		
P263	Avoid contact during pregnancy/ while nursing	No change		***- Primarily for workplace use***
P264	Wash … thoroughly after handling	TBC		
P270	Do not eat/drink or smoke when using this product	No change		
P271	Use only outdoors in a well-ventilated area	No change		
P272	Contaminated work clothing should not be allowed out of the workplace.	No change		***- Primarily for workplace use***
P273	Avoid release to the environment	No change		

[3] *For present purposes, numbering has been kept as at present for statements which are retained from current GHS in the same or edited form. However if the proposals for re-grouping the statements are taken up, statements P401 – P413 would have to be renumbered in the form P2… to make clear that they are now located in Table **A3.2.2**.*

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P280	Wear protective gloves/protective clothing/eye protection/face protection	Explosives	**<u>Unstable explosives,</u>** Divisions 1.1, 1.2, 1.3, 1.4, 1.5	- *specify face protection* Manufacturer/supplier or the competent authority to specify type of equipment.
		Flammable liquids	1, 2, 3, 4	- *specify protective gloves and eye/face protection* Manufacturer/supplier or the competent authority to specify type of equipment
		Flammable solids	1, 2	
		Self-reactive substances and mixtures	Types A, B, C, D, E, F	
		Pyrophoric liquids	1	
		Pyrophoric solids	1	
		Self-heating substances and mixtures	1, 2	
		Substances and mixtures which, in contact with water, emit flammable gases	1, 2, 3	
		Oxidizing liquids	1, 2, 3	
		Oxidizing solids	1, 2, 3	
		Organic peroxides	Types A, B, C, D, E, F	
		Acute toxicity – dermal	1, 2, 3, 4	- *specify protective gloves/clothing*
		Skin corrosion	1A, 1B, 1C	- *Specify protective gloves/ clothing and eye/face protection*. Manufacturer/supplier or the competent authority to specify type of equipment.
		Skin irritation	2	- *Specify protective gloves* Manufacturer/supplier or the competent authority to specify type of equipment
		Skin sensitization	1	
		Severe eye damage	1	- *specify eye/face protection* Manufacturer/supplier or the competent authority to specify type of equipment

Code	Precautionary statement	Hazard class	Hazard category	Conditions for use
P280 (cont'd)		Eye irritation	2A	- *specify eye/face protection* Manufacturer/supplier or the competent authority to specify type of equipment
		Germ cell mutagenicity	**1A, 1B, 2**	**Manufacturer/supplier or the competent authority to specify appropriate personal protective equipment.**
		Carcinogenicity	**1A, 1B, 2**	
		Reproductive toxicity	**1A, 1B, 2**	
		Gases under pressure	**Refrigerated liquefied gas**	
~~P281~~	~~Use personal protective equipment as required~~			
~~P282~~	~~Wear cold insulating gloves/face shield/eye protection~~			
~~P283~~	~~Wear fire/flame resistant/retardant clothing~~			
P284	Wear respiratory ~~protection~~ **protective equipment**	Acute toxicity, inhalation	1,2	Manufacturer/supplier or the competent authority to specify equipment
		Respiratory sensitization	**1**	
~~P285~~	~~In case of inadequate ventilation wear respiratory protection~~			

Additional suggestions for combined precautionary statements

P361 + P363	**Take off contaminated clothing and wash before re-use**	**Skin irritation**	**2**	

Table A3.2.5 Codification of disposal precautionary statements

P501	Dispose of contents/container to…	No change		

Annex 5

Changes to the text of the GHS[4]

1. Changes to Section 1.4.10.5 – ***Allocation of label elements***

"1.4.10.5.3.3 Precedence for allocation of hazard statements

All assigned hazard statements should appear on the label. The competent authority may choose to specify the order in which they appear. **Where a combined hazard statement is indicated for two or more hazard statements, the competent authority may also decide whether to require the combined hazard statement or the individual statements to appear on the label, or to leave the choice to the supplier."**

2. Changes to Annex 3 Section 1 **CODIFICATION OF HAZARD STATEMENTS**

"A3.1.2.3 Where a combined hazard statement is indicated for two or more hazard statements, the competent authority may decide whether to require the combined hazard statement or the individual statements to appear on the label, or to leave the choice to the supplier."

3. Changes to Annex 3 Section 2 **CODIFICATION OF PRECAUTIONARY STATEMENTS**

"A3.2.1.2 For the purposes of the GHS, there are five types of precautionary statements: **general, ~~prevention~~ handling and storage, response, ~~storage~~ exposure control/personal protection** and **disposal.** For guidance of the use of GHS precautionary statements, including advice on the selection of the appropriate statements for each GHS hazard class and category, see section 3 to this annex."

[…]

A3.2.2 Codification of precautionary statements

A3.2.2.1 Precautionary statements are assigned a unique alphanumerical code which consists of one letter and three numbers as follows:

(a) a letter "P" (for "precautionary statement")

(b) one number designating the type of precautionary statement as follows:

- "1" for general precautionary statements;
- "2" for ~~prevention~~ **handling/storage** precautionary statements;
- "3" for response precautionary statements;
- "4" for ~~storage~~ **exposure control/personal protection** precautionary statements;
- "5" for disposal precautionary statements.

[…]

[4] Throughout, additions are indicated in **bold underlined text**, and deletions in ~~strikethrough~~.

A3.2.3.6 When *text in italics* is used in column (5)*.*…
… only applies for flammable solids "*if dust clouds can occur*".

A3.2.3.6a Text in italics is also used to indicate where statements are "*primarily for workplace use*", and can therefore be omitted from labels on substances or mixtures supplied only to the general public. However indications for workplace use are included as guidance only, and manufacturers/suppliers may use these statements on labels for products sold to consumers where this is appropriate.

4. Changes to Annex 3 Section 3 **USE OF PRECAUTIONARY STATEMENTS**

No significant changes required.

Annex 6

Further approaches to reducing
the number of precautionary statements that appear on labels – further details

(a) Signposting

1. One way of implementing this approach would be to use the general PS proposed in table A3.2.1 as the 'signposts' to the full list of precautionary information. (P103: **Read ~~label~~ safety information before use**, or P104: **Do NOT use until all safety precautions have been read and understood**). The approach would be to list only the PS relating to the most urgent action on the label, with the remaining PS in the safety data sheet or other accompanying information source.

2. For example, suppose a product is classified in the following hazard categories:

   Flammable liquid cat. 2, Aspiration hazard cat. 1, Skin irritation cat. 2, STOT single exposure, respiratory irritation, category 3, Hazardous to the aquatic environment Acute category, Hazardous to the aquatic environment chronic category 1.

   Concentrating on first-aid measures, the following PS would then be triggered (taking into account the changes proposed above to PS):

P301+P315	IF SWALLOWED: Get medical attention/advice immediately
P303+P352	IF ON SKIN (or hair): Wash with plenty of soap and water.
P303+P361+P352	IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Wash with plenty of soap and water…
P304+P340	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P312	Get medical advice/attention if you feel unwell.
P321	Specific treatment (see ... on this label).
P331	Do NOT induce vomiting.
P361 + P363	Take off immediately all contaminated clothing and wash before re-use.
P333+P313	If skin irritation or rash occurs: Get medical advice/ attention.

3. The label could then include the PS which reflect the most severe hazard category (in this case, Aspiration hazard, category 1), together with a statement such as P104 as the 'signpost' to the safety data sheet (or other information). Thus, the label would only contain the following statements, with the remaining information in the SDS:

P301+ P315	IF SWALLOWED: Get medical attention/advice immediately
P331	Do NOT induce vomiting.
P104	Do NOT use until all safety precautions have been read and understood

4. Although this approach has the potential to significantly reduce the number of PS which appear on labels, it would need to be applied with care. The main caveat is that where a signpost statement is used on a product, an appropriate source of more detailed information must be

readily available to any user. In some cases, the safety data sheet could serve this purpose, but this would not be true in all cases: consumers would not be supplied with safety data sheet, but even in a workplace situation a safety data sheet may be used primarily as a management tool, and may not be easily available to the worker using the product. Therefore, clear guidance would be needed in the GHS to ensure that whatever the circumstances, all the appropriate precautionary information is present and made available to every user in an appropriate and accessible form.

(b) Order of preference for precautionary statements

5. One idea, as suggested in A3.3.4.6, would be to base an order of preference on the stringency of the required action. Thus, statements requiring immediate or urgent action should be given precedence over similar statements where less urgent action is needed of a similar type. Thus, for example, if a substance is classified as both a flammable liquid cat 1, and a skin irritant cat 2, it will be assigned (inter alia) the following PS (marking the proposed changes to the PS):

> P303+P361+~~P353~~ P352: IF ON SKIN (or hair): ~~Remove~~/Take off immediately all contaminated clothing. ~~Rinse skin with water/shower~~. **Wash with plenty of soap/water.**
> ~~P302~~ **P303** + ~~P350~~ **P352**: IF ON SKIN **(or hair)**: ~~Gently~~ wash with plenty of soap/water/…

In this case the second statement could be omitted, as the action required is also covered by the first statement, whose advice is also more urgent.

6. A second example would be if a substance is classified as corrosive to metals cat 1, in which case it will be assigned the following statements:

> P234 ~~Keep~~ **Store** only in original container
> P406 Store in corrosive resistant/… container with a resistant inner liner.

Hence P234 could be given precedence over P406, assuming that the original container of the substance is corrosive resistant or meets the other required conditions. (However, it should be noted that given that a manufacturer/supplier may choose not to include P234, P406 should not be deleted altogether).

7. This idea could be implemented using the 'conditions for use' column in tables A3.2.1-3.2.5, using italicized text to indicate where one statement could be omitted in case another is present. Thus, in the conditions for use under P406, the text '-*can be omitted if P234 is included on the label*' could be included.

8. This idea has yet to be developed, but there are likely to be further cases where an 'order of preference' could be applied. The views of UNSCEGHS would be welcomed on whether this idea would be worth pursuing further.
