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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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Item 3(a) of the provisional agenda

HAZARD COMMUNICATION ISSUES

Hierarchy of labelling elements

Codification of hazard and Precautionary Statements

Transmitted by the Chairperson and the expert from Australia

Introduction

1. This paper proposes a system for numbering, or codifying, GHS hazard statements and precautionary statements. The paper also proposes a number of minor editorial changes to several precautionary statements for consistency and to rationalise superfluous statements.

Background

2. The codification of hazard statements and precautionary statements is considered to be an important first step in assessing how the different statements may complement or conflict with each other, and whether any measure of priority or hierarchy can be assigned to them. A hierarchy of GHS classification information could be used as a tool to manage the information conveyed on a label, whilst reflecting the principles and the intent of the GHS.

3. Codification of the various labelling elements is also an important tool to aid consistency of translation of labelling information across the different language versions of the GHS and across different language versions of information on a label.

4. At the 9th session of the SCEGHS, the Chairperson presented a working paper on the codification or numbering of hazard statements, [ST/SG/AC.10/C.4/2005/1 - Numbering of GHS Hazard Statements](#). The proposal utilised a sequential numbering system for all hazard statements.

5. As an alternative to the numbering system proposed by the Chairperson, Australia presented two informal papers on the codification of hazard statements and precautionary statements. The informal papers were [UN/SCEGHS/9/INF.8 - Numbering of GHS hazard statements](#) and [UN/SCEGHS/9/INF.7 - Codification of Precautionary Statements \(PS\)](#).

6. The Australian proposal had hazard statements within hazard group that were numbered sequentially, ie. H100 to H128 for physical hazards, H200 to H234 for health hazards and H300 to H306 for environmental hazards. The codification system proposed for precautionary statements utilised a two-letter, two-number system (ie PP for prevention statements, PR for response statements, PS for storage statements and PD for disposal statements). Statements were grouped by the similarity of information they conveyed, and then numbered sequentially within each of these categories.

7. At the 9th session of SCEGHS, discussion of the two informal papers on codification included the possibility of using a combination of letters and numbers in the hazard statement numbering system to more clearly identify the nature of the hazard, for example whether they related to physical, health or environmental hazards. This has been incorporated into the hazard statement numbering system described in this paper.

Discussion

8. The codified hazard statements and precautionary statements are shown at Annexes 1 and 2. The basis for the codification is set out below.

Hazard statements

9. For hazard statements, each type of statement is allocated a two-letter code (ie. HP for physical hazards, HH for health hazards and HE for environmental hazards) in conjunction with two numbers. Each hazard statement is given a unique code number.

10. Statements from each broad group (HP, HH and HE) are further separated into sub-groups based on the general hazard type. For example, hazard statements relating to physical hazards are separated into sub-groups relating to explosion, flammability, reactivity and miscellaneous hazards, while health hazard statements are separated into sub-groups for oral, dermal and inhalation effects, cancer/genetic and specific target organ systemic toxicity. Statements in each sub-group are numbered sequentially, with each sub-group starting with 01, 11, 21, 31... etc.

11. The numbering system described above differs from the proposal presented in ST/SG/AC.10/C.4/2005/1 - *Numbering of GHS Hazard Statements*, where the numbering system is continuous for the entire set of hazard statements. The benefit of the revised numbering system in this proposal is that any new statements generated in future revisions of the GHS documentation may be included within the groups and sub-groups with other related statements.

Precautionary statements

12. As with the hazard statement numbering system, each precautionary statement is assigned a two letter code (ie. PP for prevention statements, PR for response statements, PS for storage statements and PD for disposal statement), which in combination with a two digit numeral forms a unique identifier (eg PR04, PP22 etc). The numbering for each grouping starts with 01, 11, 21, 31... etc.

13. The statements within each type (PP, PR, PS or PD) are allocated to categories based on the similarity of the information conveyed in the statements. The categorisation information is included in the attached spreadsheet and shows how the groupings were determined. Within each grouping, statements are ordered, based on either seriousness or generality, with the more serious or broader statements listed first within each grouping, depending on the type of statement.

14. For both the hazard statements and precautionary statements, if related statements are added to the system in the future then they can be inserted into each group or sub-group at an appropriate place using the unassigned numbers. This is an important consideration as the precautionary statements may be refined as implementation experience is gained.

15. Where two or more statements are unique to one classification category and are only used in that combination, they are grouped under a single code number. For example, the response statements for cryogenics are grouped together and assigned the code of PR50, as shown below:

PR50 Thaw frosted parts with lukewarm water.
 Do not rub affected area.
 Get immediate medical attention/advice.

Proposed editorial changes to precautionary statements

16. During the codification of the precautionary statements and discussions at the 9th SCEGHS, it was noted that several precautionary statements may require some clarification or editorial revision for consistency and to minimise unnecessary duplication. The following statements are proposed for editorial revision and have been included in Annex 2 in italics e.g., *PP11* in the proposed edited form:

- (a) The following precautionary statements each relate to a hazard associated with contact or proximity to an ignition source

Keep away from <i>ignition sources such as</i> heat/sparks/open flame. - No smoking.
Keep away from flames and hot surfaces.
Keep away from heat.

It is proposed that these statements may be replaced by a single statement:

PP10 Keep away from *ignition sources such as...* heat/sparks/open flame/hot surfaces... – No smoking

- (b) The first part of each precautionary statement below (PR01, PR02 and PR03) is referring to the same requirement.

IF INHALED: Remove <i>victim</i> to fresh air and keep at rest in a position comfortable for breathing. Immediately call a POISON CENTRE or doctor/physician. Specific treatment is urgent (see ... on this label) ... reference to Supplemental First Aid Instruction - <i>if immediate administration of antidote is required.</i>
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician. Specific treatment (see ... on this label) ... reference to Supplemental First Aid Instruction - <i>if immediate specific measures are required</i>
IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POSION CENTER or doctor/physician if you feel unwell.

It is proposed to delete the word “victim” from the first statement to make this consistent with the two following statements. The first line of each of the three statements would be:

Remove to fresh air and keep at rest in a position comfortable for breathing.

- (c) In the following precautionary statements, the words “get” or “seek” have been used, apparently as alternatives to each other. There does not appear to be a rationale for using the two different terms in the statements.

If eye irritation persists, get medical advice/attention.
If skin irritation or rash occurs, seek medical advice/attention.
If skin irritation occurs, get medical advice/attention.
If skin irritation occurs, seek medical advice/attention.
Thaw frosted parts with lukewarm water. Do not rub affected area. Seek immediate medical attention/advice.
If exposed or concerned: Get medical attention/advice.
Get medical attention/advice if you feel unwell.

For consistency, it is proposed that where the word “seek” is used, it be replaced by the word “get”. The third and fourth statements in the above table then become identical (PR37) and one could therefore be deleted.

- (d) In the following two precautionary statements (PR33 and PR34), the wording is inconsistent.

IF ON SKIN: Immerse in cool water/wrap with wet bandages.
Brush off loose particles from skin and immerse in cool water/wrap in wet bandages.

For consistency it is proposed that the first statement (PR33) be amended as:

... /wrap in wet bandages

- (e) The following statements are similar in intent.

Wash/Decontaminate removed clothing before reuse.
Wash contaminated clothing before reuse.

It is proposed the above statements be replaced by one statement:

PR43 Wash contaminated clothing before reuse.

- (f) The following statements are essentially identical.

Call a POISON CENTER or doctor/physician if you feel unwell.
Call a POISON CENTER/doctor/physician if you feel unwell.

It is proposed these statements be replaced by one statement:

PR65 Call a POISON CENTER or doctor/physician if you feel unwell

- (g) The use of the term “any white hot material” in the following statement (PR11) appears to be restrictive if the intent of the statement is to warn against the spraying of aerosols on ignition sources.

Do not spray on an open flame or any white-hot material.

It is proposed the above statement be amended as follows to better reflect the intent:

PP11 Do not spray on an open flame or other ignition sources.

Annex 1Codified Hazard Statements**Physical hazards (Coded HP)**

Code	Hazard Statement
HP01	Unstable Explosive
HP02	Explosive; mass explosion hazard
HP03	Explosive; severe projection hazard
HP04	Explosive; fire, blast or projection hazard
HP05	Fire or projection hazard
HP06	May mass explode in fire
HP07	Heating may cause an explosion
HP08	Heating may cause a fire or explosion
HP09	May cause fire or explosion; strong oxidizer
HP20	Catches fire spontaneously if exposed to air
HP21	May cause or intensify fire; oxidizer
HP22	May intensify fire; oxidizer
HP23	In contact with water releases flammable gases which may ignite spontaneously
HP24	In contact with water releases flammable gas
HP25	Self-heating; may catch fire
HP26	Self-heating in large quantities; may catch fire
HP27	Heating may cause a fire
HP40	Extremely flammable gas
HP41	Flammable gas
HP42	Extremely flammable aerosol
HP43	Flammable aerosol
HP44	Extremely flammable liquid and vapour
HP45	Highly flammable liquid and vapour
HP46	Flammable liquid and vapour
HP47	Combustible liquid
HP48	Flammable solid
HP60	Contains gas under pressure; may explode if heated
HP61	Contains refrigerated gas; may cause cryogenic burns or injury
HP62	May be corrosive to metals

Health hazards (Coded HH)

Code	Hazard Statement
HH01	Fatal if swallowed
HH02	Toxic if swallowed
HH03	Harmful if swallowed
HH04	May be harmful if swallowed
HH10	Fatal in contact with skin
HH11	Toxic in contact with skin
HH12	Harmful in contact with skin
HH13	May be harmful in contact with skin
HH14	Causes severe skin burns and eye damage
HH15	Causes skin irritation
HH16	Causes mild skin irritation

Code	Hazard Statement
HH17	Causes serious eye damage
HH18	Causes serious eye irritation
HH19	Causes eye irritation
HH20	May cause an allergic skin reaction
HH30	Fatal if inhaled
HH31	Toxic if inhaled
HH32	Harmful if inhaled
HH33	May be harmful if inhaled
HH34	May be fatal if swallowed and enters airways
HH35	May be harmful if swallowed and enters airways
HH36	May cause respiratory irritation
HH37	May cause drowsiness or dizziness
HH38	May cause allergy or asthma symptoms or breathing difficulties if inhaled
HH50	May cause genetic defects <i><state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard></i>
HH51	Suspected of causing genetic defects <i><state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard></i>
HH52	May cause cancer <i><state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard></i>
HH53	Suspected of causing cancer <i><state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard></i>
HH54	May damage fertility or the unborn child <i><state specific effect if known></i> <i><state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard></i>
HH55	Suspected of damaging fertility or the unborn child <i><state specific effect if known></i> <i><state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard></i>
HH56	May cause harm to breast-fed children
HH60	Causes damage to organs <i><or state all organs affected, if known></i> <i><state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard></i>
HH61	May cause damage to organs <i><or state all organs affected, if known></i> <i><state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard></i>
HH62	Causes damage to organs <i><or state all organs affected, if known></i> through prolonged or repeated exposure <i><state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard></i>
HH63	May cause damage to organs <i><or state all organs affected, if known></i> through prolonged or repeated exposure <i><state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard></i>

Environmental hazards (Coded HE)

Code	Hazard Statement
HE01	Very toxic to aquatic life
HE02	Toxic to aquatic life
HE03	Harmful to aquatic life
HE04	Very toxic to aquatic life with long lasting effects
HE05	Toxic to aquatic life with long lasting effects
HE06	Harmful to aquatic life with long lasting effects
HE07	May cause long lasting harmful effects to aquatic life

Annex 2Codified Precautionary Statements

Prevention statements (Coded PP)

Code	Prevention
PP01	Obtain special instructions before use.
PP02	Do not handle until all safety precautions have been read and understood.
PP10	Keep away from ignition sources such as heat/sparks/open flame/hot surfaces - No smoking.
PP11	Do not spray on an open flame or other ignition sources.
PP20	Do not allow contact with air.
PP21	Keep from any possible contact with water, because of violent reaction and possible flash fire.
PP22	Handle under inert gas, protect from moisture.
PP23	Keep away from ... incompatible materials specified by the manufacturer/supplier or the competent authority.
PP24	Keep away from combustible materials. Keep reduction valves free from grease and oil.
PP25	Keep away from clothing and other combustible materials.
PP26	Take any precaution to avoid mixing with combustibles/... other incompatible materials specified by the manufacturer/supplier or the competent authority.
PP30	Keep wetted with ... appropriate material specified by the manufacturer/supplier or the competent authority.- if drying out increases explosion hazard, except as needed for manufacturing or operating processes. Example: nitrocellulose
PP31	Keep cool and protect from sunlight.
PP32	Keep container tightly closed.
PP33	Keep only in original container.
PP40	Ground/bond container and receiving equipment - if the explosive is electrostatically sensitive.
PP41	Ground/Bond container and receiving equipment. - if electrostatically sensitive material is for reloading.
PP42	Ground/Bond container and receiving equipment - if electrostatically sensitive material is for reloading. - if product is as volatile as to generate hazardous atmosphere.
PP43	Take precautionary measures against static discharge.
PP44	Use explosion-proof electrical/ventilating/ lighting/... equipment ... other specified by the manufacturer/supplier or the competent authority.
PP45	Use explosion-proof electrical/ventilating/lighting/... equipment ... other specified by the manufacturer or the competent authority. - if dust clouds can occur.
PP46	Use only non-sparking tools.
PP50	Do not subject to rough handling such as grinding/shock/friction.
PP51	Pressurized container: Do not pierce or burn, even after use.
PP60	Do not breathe dust/fume/gas/ mist/vapours/spray.
PP61	Do not breathe dust or mist - if inhalable particles may occur during use.
PP62	Do not get in eyes, on skin, or on clothing.
PP63	Avoid contact during pregnancy/while nursing.

Code	Prevention
PP64	Avoid breathing dust/fume/gas/ mist/vapours/spray.
PP65	Use only outdoors or in a well-ventilated area.
PP66	Avoid release to the environment. - <i>if this is not the intended use.</i>
PP67	Do not eat, drink or smoke when using this product.
PP68	Contaminated work clothing should not be allowed out of the workplace.
PP69	Wash thoroughly after handling.
PP70	Wash hands thoroughly after handling.
PP80	Wear respiratory protection as specified by the manufacturer or the competent authority.
PP81	In case of inadequate ventilation wear respiratory protection as specified by the manufacturer or the competent authority.
PP82	Wear protective gloves/clothing and eye/face protection as specified by the manufacturer /supplier or the competent authority.
PP83	Wear protective gloves and eye/face protection as specified by the manufacturer /supplier or the competent authority.
PP84	Wear eye/face protection as specified by the manufacturer or the competent authority.
PP85	Wear cold insulating gloves/face shield/eye protection.
PP86	Wear face protection as specified by the manufacturer /supplier or the competent authority.
PP87	Wear protective gloves/clothing as specified by the manufacturer/supplier or the competent authority.
PP88	Wear fire/flare resistant/retardant clothing.
PP89	Wear protective gloves as specified by the manufacturer/supplier or the competent authority.
PP90	Use personal protective equipment as required.

Response statements (Coded PR)

Code	Response
PR01	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.. Immediately call a POISON CENTRE or doctor/physician. Specific treatment is urgent (see ... on this label) ... reference to Supplemental First Aid Instruction - if immediate administration of antidote is required.
PR02	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTRE or doctor/physician. Specific treatment (see ... on this label) ... reference to Supplemental First Aid Instruction - if immediate specific measures are required
PR03	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
PR04	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
PR05	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
PR06	IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell
PR10	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth
PR11	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.
PR12	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Code	Response
PR13	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
PR20	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
PR21	If eye irritation persists, get medical advice/attention.
PR30	IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
PR31	IF ON SKIN: Wash with plenty of soap and water.
PR32	IF ON SKIN: Gently wash with plenty of soap and water.
PR33	IF ON SKIN: Immerse in cool water/wrap in wet bandages.
PR34	Brush off loose particles from skin and immerse in cool water/wrap in wet bandages.
PR35	Wash hands after handling
PR36	If skin irritation or rash occurs, get medical advice/attention.
PR37	If skin irritation occurs, get medical advice/attention.
PR40	IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
PR41	Remove/Take off immediately all contaminated clothing.
PR42	Take off contaminated clothing and wash before re-use.
PR43	Wash contaminated clothing before reuse.
PR50	Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical attention/advice.
PR60	Immediately call a POISON CENTRE or doctor/physician.
PR61	Call a POISON CENTRE or doctor/physician if exposed or if you feel unwell.
PR62	IF exposed: Call a POISON CENTRE or doctor/physician.
PR63	If exposed or concerned: Get medical attention/advice.
PR64	If experiencing respiratory symptoms call a POISON CENTRE or doctor/physician.
PR65	Call a POISON CENTRE or doctor/physician if you feel unwell.
PR66	Get medical attention/advice if you feel unwell.
PR70	Specific treatment (see ... on this label) ... reference to Supplemental First Aid Instruction. - if immediate administration of antidote is required.
PR71	Specific measures (see ... on this label) ... reference to Supplemental First Aid Instruction. - if immediate measures such as specific cleansing agent is advised.
PR72	Specific treatment (see ... on this label) ... reference to Supplemental First Aid Instruction. may include a cleansing agent specified by the manufacturer/supplier or the competent authority.
PR73	Specific treatment (see ... on this label) ... reference to Supplemental First Aid Instruction. - if immediate measures are required.
PR80	DO NOT fight fire when fire reaches explosives. Explosion risk in case of fire. Evacuate area.
PR81	DO NOT fight fire when fire reaches explosives. Explosion risk in case of fire. In case of fire, evacuate area.

Code	Response
PR82	DO NOT fight fire when fire reaches explosives. In case of fire, evacuate area. Fight fire with normal precautions from a reasonable distance - if explosives are 1.4S <i>AMMUNITION AND COMPONENTS THEREOF.</i>
PR83	In case of fire: evacuate area and fight fire remotely due to the risk of explosion.
PR84	In case of major fire and large quantities: evacuate area and fight fire remotely due to the risk of explosion.
PR85	In case of fire, use ... for extinction ... appropriate media specified by the manufacturer/supplier or the competent authority. - <i>if water increases risk.</i>
PR86	Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.
PR87	In case of fire, stop leak if safe to do so.
PR90	Absorb spillage to prevent material damage.
PR91	Collect spillage.

Storage statements (Coded PS)

Code	Statement (Storage)
PS01	Store away from other materials.
PS02	Store away from combustibles/... .. other incompatible materials specified by the manufacturer/supplier or the competent authority.
PS03	Store in a dry place and/or in closed container.
PS04	Store contents under appropriate liquid or inert gas specified by the manufacturer/supplier or the competent authority.
PS05	Store in corrosive resistant/... container with a resistant inliner. ... other compatible materials specified by the manufacturer/supplier or the competent authority.
PS10	Store in cool place at temperatures not exceeding ...°C/...°F. ... specified by the manufacturer/supplier or the competent authority.
PS11	Store at temperatures not exceeding ...°C/...°F. ... specified by the manufacturer/supplier or the competent authority
PS12	Store bulk masses greater than ... kg/...lbs at temperatures not exceeding ...°C/...°F. ... specified by the manufacturer/supplier or the competent authority.
PS13	Protect from sunlight and do not expose to temperatures exceeding 50 °C/122 °F.
PS14	Protect from sunlight.
PS15	Protect from sunlight and store in well-ventilated place .
PS16	Store in cool/well-ventilated place.
PS17	Store container tightly closed in well-ventilated place. - <i>if product is as volatile as to generate hazardous atmosphere.</i>
PS18	Store in well-ventilated place.
PS19	Maintain air gap between stacks/pallets.
PS30	Store ... (in accordance with local/regional/national/ international regulation).
PS31	Store locked up.

Disposal statements (Coded PD)

Code	Statement (Disposal)
PD01	Dispose of contents/container to ... (in accordance with local/regional/national/international regulation).