

**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
Transport of Dangerous Goods

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HAZARD COMMUNICATION ISSUES

Hierarchy of labelling elements

Codification of hazard and precautionary statements

Transmitted by the European Chemical Industry Council (CEFIC)

Introduction

CEFIC endorses and supports the principles underlying paper 2005/8 submitted by the Chairperson and the Expert from Australia, but is concerned at the codification system being proposed. We consider that from a human cognitive perspective that a one alpha, three numeric system is much easier to assimilate, memorise and recognise than a two alpha, two numeric system and is more user friendly.

Discussion

CEFIC has reviewed paper 2005/8 as per the attached Annexes which are:

- Annex I – Hazard Statement Codification
- Annex II – Precautionary Statement Codification

Annex I - We have revised the hazard statement codification in paper 2005/8 by changing them to a one alpha, three numeric code.

Annex II – We have revised the precautionary statement codification in paper 2005/8 by changing them to a one alpha, three numeric code.

CEFIC appreciates and supports all the work that has been put into the proposal. However in the EU the phrases have to be translated into about 20 different languages, thus language is an important consideration, for example the translation of “Health” into French is “Santé”, therefore in French the coding for Health Hazard Statements could change from “PHXX” to “PSXX”. We have also examined the possibility of building on the work that has already been done by trying to make the precautionary statement phrases simpler/easier to translate, update and computerise, i.e. to see if the proposal can be made even more user friendly.

For example, we noted that phrases PP40, PP41 and PP42 have the same wording but their criteria for applicability differ. We also noted that in phrases PR01 to PR13 there is some inbuilt duplication of some of the internal phraseology. We have revised the content of 2005/8 to try to avoid this. In doing so we have:

- Used bold text for the wording of the phrases as they will appear on the label;
- Used normal text to add "Modifiers" (modifying conditions) for the phrase wording as described in A3.5 of GHS Annex 3;
- Used Italic text to add "Qualifiers" as described in A3.5 of GHS Annex 3;

We have broken down some of the longer phrases into their individual components, e.g. PR01 comprised of 4 individual phrases which are repeated in other phrases. Where we have added new phrases to facilitate the changes we have made, we have used underline text and highlighted these in cyan. The phrases that consequently become redundant are highlighted in yellow and are in strikethrough text, but we have included an indication of which new or existing phrases constitute the original ones (some of these are also referenced by text in square brackets and highlighted in grey). In some cases where we ran out of numbers, we have put the "P" after the numbers, e.g. 234P for the sake of this paper, but once the phrases in yellow are deleted, the numbers that become free can be reallocated to revert to the normal numbering, i.e. P234 or whatever. It may be that there are opportunities for further refinement, and if considered appropriate CEFIC is willing to work with the Chairperson and the Expert from Australia to develop the proposal further.

Annex 1
Codified hazard statements

Physical hazards (Coded H1)

Code	Hazard statement
H101	Unstable Explosive
H102	Explosive; mass explosion hazard
H103	Explosive; severe projection hazard
H104	Explosive; fire, blast or projection hazard
H105	Fire or projection hazard
H106	May mass explode in fire
H107	Heating may cause an explosion
H108	Heating may cause a fire or explosion
H109	May cause fire or explosion; strong oxidizer
H120	Catches fire spontaneously if exposed to air
H121	May cause or intensify fire; oxidizer
H122	May intensify fire; oxidizer
H123	In contact with water releases flammable gases which may ignite spontaneously
H124	In contact with water releases flammable gas
H125	Self-heating; may catch fire
H126	Self-heating in large quantities; may catch fire
H127	Heating may cause a fire
H140	Extremely flammable gas
H141	Flammable gas
H142	Extremely flammable aerosol
H143	Flammable aerosol
H144	Extremely flammable liquid and vapour
H145	Highly flammable liquid and vapour
H146	Flammable liquid and vapour
H147	Combustible liquid
H148	Flammable solid
H160	Contains gas under pressure; may explode if heated
H161	Contains refrigerated gas; may cause cryogenic burns or injury
H162	May be corrosive to metals

Health hazards (Coded H2)

Code	Hazard statement
H201	Fatal if swallowed
H202	Toxic if swallowed
H203	Harmful if swallowed
H204	May be harmful if swallowed
H210	Fatal in contact with skin
H211	Toxic in contact with skin
H212	Harmful in contact with skin
H213	May be harmful in contact with skin
H214	Causes severe skin burns and eye damage
H215	Causes skin irritation
H216	Causes mild skin irritation
H217	Causes serious eye damage
H218	Causes serious eye irritation
H219	Causes eye irritation
H220	May cause an allergic skin reaction
H230	Fatal if inhaled
H231	Toxic if inhaled
H232	Harmful if inhaled
H233	May be harmful if inhaled
H234	May be fatal if swallowed and enters airways
H235	May be harmful if swallowed and enters airways
H236	May cause respiratory irritation
H237	May cause drowsiness or dizziness
H238	May cause allergy or asthma symptoms or breathing difficulties if inhaled
H250	May cause genetic defects <i><state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard></i>
H251	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>
H252	May cause cancer <i><state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard></i>
H253	Suspected of causing cancer <i><state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard></i>
H254	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>
H255	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>

Code	Hazard statement
H256	May cause harm to breast-fed children
H260	Causes damage to organs <or state all organs affected, if known> <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>
H261	May cause damage to organs <or state all organs affected, if known> <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>
H262	Causes damage to organs <or state all organs affected, if known> through prolonged or repeated exposure <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>
H263	May cause damage to organs <or state all organs affected, if known> through prolonged or repeated exposure <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>

Environmental hazards (Coded H3)

Code	Hazard statement
H301	Very toxic to aquatic life
H302	Toxic to aquatic life
H303	Harmful to aquatic life
H304	Very toxic to aquatic life with long lasting effects
H305	Toxic to aquatic life with long lasting effects
H306	Harmful to aquatic life with long lasting effects
H307	May cause long lasting harmful effects to aquatic life

Annex 2

Codified precautionary statements**General statements (Coded P0) (see Annex III A3.4.4)**

Code	Statement (Disposal)
P001	Keep out of reach of children.
P002	Read label before use.
P003	If medical advice is needed: Have product container or label at hand.
P010	IF INHALED:
P011	IF SWALLOWED:
P012	IF ON SKIN:
P013	IF exposed:

Prevention statements (Coded P1)

Code	Prevention
P101	Obtain special instructions before use.
P102	Do not handle until all safety precautions have been read and understood.
<i>P110</i>	Keep away from heat/sparks/open flame/hot surfaces – No smoking. <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify relevant ignition sources
<i>P111</i>	Do not spray on an open flame or other ignition sources.
P120	Do not allow contact with air.
P121	Keep from any possible contact with water, because of violent reaction and possible flash fire.
P122	Handle under inert gas, protect from moisture.
P123	Keep away from ... <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify incompatible materials
P124	Keep away from combustible materials. Keep reduction valves free from grease and oil.
P125	Keep away from clothing and other combustible materials.
P126	Take any precaution to avoid mixing with combustibles/... <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify other incompatible materials
P130	Keep wetted with ... <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify appropriate material <ul style="list-style-type: none"> – <i>if drying out increases explosion hazard, except as needed for manufacturing or operating processes. Example: nitrocellulose</i>
P131	Keep cool and protect from sunlight.
P132	Keep container tightly closed.
P133	Keep only in original container.

Code	Prevention
P140	Ground/bond container and receiving equipment. <ul style="list-style-type: none"> – <i>if the explosive is electrostatically sensitive.</i> – <i>if electrostatically sensitive material is for reloading.</i> – <i>if product is as volatile as to generate hazardous atmosphere.</i>
P141	Ground/Bond container and receiving equipment. [see P140] <i>if electrostatically sensitive material is for reloading.</i>
P142	Ground/Bond container and receiving equipment. [see P140] <i>if electrostatically sensitive material is for reloading. – if product is as volatile as to generate hazardous atmosphere.</i>
P143	Take precautionary measures against static discharge.
P144	Use explosion-proof electrical/ventilating/lighting/... equipment <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify other equipment. <ul style="list-style-type: none"> – <i>general conditions</i> – <i>if dust clouds can occur.</i>
P145	Use explosion-proof electrical/ventilating/lighting/... equipment ... [see P144] <i>other specified by the manufacturer or the competent authority.</i> <i>if dust clouds can occur.</i>
P146	Use only non-sparking tools.
P150	Do not subject to grinding/shock/friction. <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify conditions <ul style="list-style-type: none"> – <i>Such as rough handling</i>
P151	Pressurized container: Do not pierce or burn, even after use.
P160	Do not breathe dust/fume/gas/mist/vapours/spray. <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify conditions <ul style="list-style-type: none"> – <i>general conditions</i> – <i>if inhalable particles of dusts or mists may occur during use.</i>
P161	Do not breathe dust or mist [see P160] <i>if inhalable particles may occur during use.</i>
P162	Do not get in eyes, on skin, or on clothing.
P163	Avoid contact during pregnancy/while nursing.
P164	Avoid breathing dust/fume/gas/ mist/vapours/spray. [see P160]
P165	Use only outdoors or in a well-ventilated area.
P166	Avoid release to the environment. <ul style="list-style-type: none"> – <i>if this is not the intended use.</i>
P167	Do not eat, drink or smoke when using this product.
P168	Contaminated work clothing should not be allowed out of the workplace.
P169	Wash thoroughly after handling.
P170	Wash hands thoroughly after handling.
P180	Wear respiratory protection <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify relevant protection

Code	Prevention
P181	In case of inadequate ventilation wear respiratory protection <ul style="list-style-type: none"> Manufacturer/supplier or the competent authority to specify relevant protection
P182	Wear protective clothing/gloves and eye/face protection <ul style="list-style-type: none"> Manufacturer/supplier or the competent authority to specify relevant protection
P183	Wear protective gloves and eye/face protection <ul style="list-style-type: none"> Manufacturer/supplier or the competent authority to specify relevant protection
P184	Wear eye/face protection <ul style="list-style-type: none"> Manufacturer/supplier or the competent authority to specify relevant protection
P185	Wear cold insulating gloves/face shield/eye protection. <ul style="list-style-type: none"> Manufacturer/supplier or the competent authority to specify relevant protection
P186	Wear face protection. [see P184] <ul style="list-style-type: none"> Manufacturer/supplier or the competent authority to specify relevant protection
P187	Wear protective gloves/clothing <ul style="list-style-type: none"> Manufacturer/supplier or the competent authority to specify relevant protection
P188	Wear fire/flame resistant/retardant clothing.
P189	Wear protective gloves <ul style="list-style-type: none"> Manufacturer/supplier or the competent authority to specify relevant protection
P190	Use personal protective equipment as required.

Response statements (Coded P2)

Code	Response
P201	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.
P201	P010 + P267 + P260 + P274
P202	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
P202	P010 + P267 + P269 + P274
P203	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.
P203	P010 + P267 + P265
P204	IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing.
P204	P010 + P267
P205	IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.
P205	P010 + P268

Code	Response
P206	IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell
P206	P010 + P265
P210	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Rinse mouth
P210	P011 + P260 + P275
P211	IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. Do NOT induce vomiting.
P211	P011 + P260 + P276
P212	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P212	P011 + P275 + P276
P213	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
P213	P011 + P265 + P275
P220	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P221	If eye irritation persists, get medical advice/attention.
P230	IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
P230	P012 + P241 + P238
P231	IF ON SKIN: Wash with plenty of soap and water.
P231	P012 + P239
P232	IF ON SKIN: Gently wash with plenty of soap and water.
P232	P012 + 230P
P233	IF ON SKIN: Immerse in cool water/wrap in wet bandages.
P233	P012 + 231P
P234	Brush off loose particles from skin and immerse in cool water/wrap in wet bandages.
P234	234P/231P
P235	Wash hands after handling
P236	If skin irritation or rash occurs, get medical advice/attention.
P237	If skin irritation occurs, get medical advice/attention.
P238	Rinse skin with water/shower.
P239	Wash with plenty of soap and water.
230P	Gently wash with plenty of soap and water.

Code	Response
<u>231P</u>	<u>Immerse in cool water/wrap in wet bandages.</u>
<u>234P</u>	<u>Brush off loose particles from skin.</u>
P240	IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes.
P241	Remove/Take off immediately all contaminated clothing.
P242	Take off contaminated clothing and wash before re-use.
<i>P243</i>	Wash contaminated clothing before reuse.
<i>P250</i>	Thaw frosted parts with lukewarm water. Do not rub affected area. Get immediate medical attention/advice.
P260	Immediately call a POISON CENTRE or doctor/physician.
<u>P261</u>	<u>Call a POISON CENTRE or doctor/physician if exposed or if you feel unwell.</u>
<u>P261</u>	P013 + P265
<u>P262</u>	<u>IF exposed: Call a POISON CENTRE or doctor/physician.</u>
<u>P262</u>	P013 + P269
P263	If exposed or concerned: Get medical attention/advice.
P264	If experiencing respiratory symptoms call a POISON CENTRE or doctor/physician.
P265	Call a POISON CENTRE or doctor/physician if you feel unwell.
P266	Get medical attention/advice if you feel unwell.
<u>P267</u>	<u>Remove to fresh air and keep at rest in a position comfortable for breathing.</u>
<u>P268</u>	<u>If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing.</u>
<u>P269</u>	<u>Call a POISON CENTRE or doctor/physician.</u>
P270	Specific treatment (see ... on this label) <ul style="list-style-type: none"> • ... reference to Supplemental First Aid Instruction. <ul style="list-style-type: none"> – if immediate administration of antidote is required. – if immediate measures are required. – if immediate measures such as specific cleansing agent is advised. – manufacturer/supplier or the competent authority may specify inclusion of a cleansing agent.
<u>P271</u>	<u>Specific measures (see ... on this label) ... reference to Supplemental First Aid Instruction. — if immediate measures such as specific cleansing agent is advised.</u>
<u>P272</u>	<u>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.</u>
<u>P273</u>	<u>Specific treatment (see ... on this label) ... reference to Supplemental First Aid Instruction. — if immediate measures are required.</u>

Code	Response
P274	Specific treatment is urgent (see ... on this label) <ul style="list-style-type: none"> • ... reference to Supplemental First Aid Instruction – <i>if immediate administration of antidote is required.</i>
P275	Rinse mouth
P276	Do not induce vomiting.
P280	DO NOT fight fire when fire reaches explosives. Explosion risk in case of fire. Evacuate area.
P281	DO NOT fight fire when fire reaches explosives. Explosion risk in case of fire. In case of fire, evacuate area.
P282	DO NOT fight fire when fire reaches explosives. In case of fire, evacuate area. Fight fire with normal precautions from a reasonable distance – <i>if explosives are 1.4S AMMUNITION AND COMPONENTS THEREOF.</i>
P283	In case of fire: evacuate area and fight fire remotely due to the risk of explosion.
P284	In case of major fire and large quantities: evacuate area and fight fire remotely due to the risk of explosion.
P285	In case of fire, use ... for extinction <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify appropriate media. – <i>if water increases risk.</i>
P286	Leaking gas fire: Do not extinguish, unless leak can be stopped safely. Eliminate all ignition sources if safe to do so.
P287	In case of fire, stop leak if safe to do so.
P290	Absorb spillage to prevent material damage.
P291	Collect spillage.

Storage statements (Coded P3)

Code	Statement (Storage)
P301	Store away from other materials.
P302	Store away from combustibles/... <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify other incompatible materials.
P303	Store in a dry place and/or in closed container.
P304	Store contents under ... <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify appropriate liquid or inert gas.
P305	Store in corrosive resistant/... container with a resistant inliner. <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify other compatible materials.
P310	Store in cool place at temperatures not exceeding ...°C/...°F. <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify temperature.

Code	Statement (Storage)
P311	Store at temperatures not exceeding ...°C/...°F. <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify temperature.
P312	Store bulk masses greater than ... kg/...lbs at temperatures not exceeding ...°C/...°F. <ul style="list-style-type: none"> • Manufacturer/supplier or the competent authority to specify temperature.
P313	Protect from sunlight and do not expose to temperatures exceeding 50 °C/122 °F.
P314	Protect from sunlight.
P315	Protect from sunlight and store in well-ventilated place .
P316	Store in cool/well-ventilated place.
P317	Store container tightly closed in well-ventilated place. <ul style="list-style-type: none"> – <i>if product is as volatile as to generate hazardous atmosphere.</i>
P318	Store in well-ventilated place.
P319	Maintain air gap between stacks/pallets.
P330	Store ... <ul style="list-style-type: none"> • in accordance with local/regional/national/ international regulation.
P331	Store locked up.

Disposal statements (Coded P4)

Code	Statement (Disposal)
P401	Dispose of contents/container to <ul style="list-style-type: none"> • in accordance with local/regional/national/ international regulation.