

Chemical hazard and safety information

Contents

1. [Labelling of chemicals](#)
2. [Codification of H-\(hazard\) statements](#)
3. [Codification of P-\(precautionary\) statements](#)

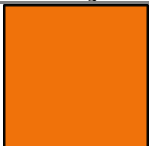
Labelling of chemicals



















The **C**lassification, **L**abelling and **P**ackaging (CLP) of chemical substances and mixtures is an European regulation ((EC) No 1272/2008). The regulation replaces the Dangerous Substances Directive (67/548/EEC) and the Dangerous Preparations directive (1999/45/EC). As a result from this change the Chemical Hazard Symbols are replaced by new GHS symbols together with the conversion of R(isk)- and S(afety) phrases into H(azard)- and P(recaution) phrases


The GHS is a United Nations system to identify hazardous chemicals and to inform users about these hazards through standard symbols and phrases on the packaging labels and through safety data sheets (SDS). Its main objectives are to facilitate international trade in chemicals and to maintain the existing level of protection of human health and environment.

It is the task of industry to establish what are the hazards of substances and mixtures (preparations) before these are placed on the market, and to classify them in line with the identified hazards. In case a substance or a mixture is hazardous, it has to be labelled so that workers and consumers know about its effects before they handle it.

Old/New table Chemical Hazard Symbols

Old	New
DSD-symbols 67/548/EEC	CLP-symbols (EC) No 1272/2008
	
Blanc field; no dangerous substance	

		
Harmful	Irritant	<ul style="list-style-type: none"> - Irritant - Dermal Sensitizer - Acute toxicity (harmful) - Narcotic Effects - Respiratory Tract Irritation
		
Corrosive		Corrosives
		
Toxic	Very toxic	Acute toxicity (severe)
		
Highly flammable	Extremely flammable	<ul style="list-style-type: none"> - Flammables - Self Reactives - Pyrophorics - Self-Heating - Emits Flammable Gas - Organic Peroxides
		
Oxidizing		Oxidizers
		
Explosive		<ul style="list-style-type: none"> - Explosives - Self Reactives - Organic Peroxides
		
Dangerous for the environment		Environmental Toxicity
		
		<ul style="list-style-type: none"> - Carcinogen - Respiratory Sensitizer

	<ul style="list-style-type: none"> - Reproductive Toxicity - Target Organ Toxicity - Mutagenicity - Aspiration Toxicity
	
	Gases Under Pressure

Codification of H-(hazard) statements

Hazard statement means a statement assigned to a hazard class and category that describes the nature of the hazards of a hazardous product, including, where appropriate, the degree of hazard. The "H" statements replace the former R(isk) phrases that were applied as part of the Dangerous Substances Directive which has been repealed when the CLP-regulation came into force.

Hazard statements are assigned a unique alphanumeric code which consists of the letter "H" and three numbers, designating the type of hazard as follows:

The first number indicates;

- "2" for physical hazards
- "3" for health hazards
- "4" for environmental hazards

The second and third numbers correspond to the sequential numbering of hazards arising from the intrinsic properties of the substance or mixture, such as explosivity (codes from 200 to 210) and flammability (codes from 220 to 230).

H2.. Physical hazards

H200: Unstable explosive
H201: Explosive; mass explosion hazard
H202: Explosive; severe projection hazard
H203: Explosive; fire, blast or projection hazard
H204: Fire or projection hazard
H205: May mass explode in fire
H220: Extremely flammable gas
H221: Flammable gas
H222: Extremely flammable material
H223: Flammable material
H224: Extremely flammable liquid and vapour
H225: Highly flammable liquid and vapour
H226: Flammable liquid and vapour
H227: Combustible liquid
H228: Flammable solid
H240: Heating may cause an explosion
H241: Heating may cause a fire or explosion

H242: Heating may cause a fire
H250: Catches fire spontaneously if exposed to air
H251: Self-heating; may catch fire
H252: Self-heating in large quantities; may catch fire
H260: In contact with water releases flammable gases which may ignite spontaneously
H261: In contact with water releases flammable gas
H270: May cause or intensify fire; oxidizer
H271: May cause fire or explosion; strong oxidizer
H272: May intensify fire; oxidizer
H280: Contains gas under pressure; may explode if heated
H281: Contains refrigerated gas; may cause cryogenic burns or injury
H290: May be corrosive to metals

H3.. Health hazards

H300: Fatal if swallowed
H301: Toxic if swallowed
H302: Harmful if swallowed
H303: May be harmful if swallowed
H304: May be fatal if swallowed and enters airways
H305: May be harmful if swallowed and enters airways
H310: Fatal in contact with skin
H311: Toxic in contact with skin
H312: Harmful in contact with skin
H313: May be harmful in contact with skin
H314: Causes severe skin burns and eye damage
H315: Causes skin irritation
H316: Causes mild skin irritation
H317: May cause an allergic skin reaction
H318: Causes serious eye damage
H319: Causes serious eye irritation
H320: Causes eye irritation
H330: Fatal if inhaled
H331: Toxic if inhaled
H332: Harmful if inhaled
H333: May be harmful if inhaled
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled
H335: May cause respiratory irritation
H336: May cause drowsiness or dizziness
H340: May cause genetic defects
H341: Suspected of causing genetic defects
H350: May cause cancer
H351: Suspected of causing cancer
H360: May damage fertility or the unborn child
H361: Suspected of damaging fertility or the unborn child
H362: May cause harm to breast-fed children
H370: Causes damage to organs
H371: May cause damage to organs
H372: Causes damage to organs through prolonged or repeated exposure
H373: May cause damage to organs through prolonged or repeated exposure

H4.. Environmental hazards

H400: Very toxic to aquatic life
H401: Toxic to aquatic life
H402: Harmful to aquatic life
H410: Very toxic to aquatic life with long lasting effects
H411: Toxic to aquatic life with long lasting effects
H412: Harmful to aquatic life with long lasting effects
H413: May cause long lasting harmful effects to aquatic life
H420: Harms public health and the environment by destroying ozone in the upper atmosphere

Codification of P-(precautionary) statements

A precautionary statement is a phrase (and/or pictogram) which describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposures to a hazardous product, or improper storage or handling of a hazardous product.

Precautionary statements are assigned a unique alphanumeric code which consists of the letter "P" and three numbers, designating the precautions as follows:

- The first number indicates:
 - "1" for general precautionary statements
 - "2" for prevention precautionary statements
 - "3" for response precautionary statements
 - "4" for storage precautionary statements
 - "5" for disposal precautionary statements
- The second and third numbers correspond to the sequential numbering of precautionary statements.

The "P" statements replace the former S(afety) phrases that were applied as part of the Dangerous Substances Directive which has been repealed when the CLP-regulation came into force.

P1.. Codification of General precautionary statements

P101: If medical advice is needed, have product container or label at hand
P102: Keep out of reach of children
P103: Read label before use

P2.. Prevention precautionary statements

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
P211: Do not spray on an open flame or other ignition source
P220: Keep/Store away from clothing/.../combustible materials
P221: Take any precaution to avoid mixing with combustibles

P222: Do not allow contact with air
P223: Keep away from any possible contact with water, because of violent reaction and possible flash fire
P230: Keep wetted with ...
P231: Handle under inert gas
P232: Protect from moisture
P233: Keep container tightly closed
P234: Keep only in original container
P235: Keep cool
P240: Ground/bond container and receiving equipment
P241: Use explosion-proof electrical/ventilating/light/.../equipment
P242: Use only non-sparking tools
P243: Take precautionary measures against static discharge
P244: Keep reduction valves free from grease and oil
P250: Do not subject to grinding/shock/.../friction
P251: Pressurized container – Do not pierce or burn, even after use
P260: Do not breathe dust/fume/gas/mist/vapours/spray
P261: Avoid breathing dust/fume/gas/mist/vapours/spray
P262: Do not get in eyes, on skin, or on clothing
P263: Avoid contact during pregnancy/while nursing
P264: Wash ... thoroughly after handling
P270: Do not eat, drink or smoke when using this product
P271: Use only outdoors or in a well-ventilated area
P272: Contaminated work clothing should not be allowed out of the workplace
P273: Avoid release to the environment
P280: Wear protective gloves/protective clothing/eye protection/face protection
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
P285: In case of inadequate ventilation wear respiratory protection
P231+232: Handle under inert gas. Protect from moisture
P235+410: Keep cool. Protect from sunlight

P3.. Response precautionary statements

P301: IF SWALLOWED:
P302: IF ON SKIN:
P303: IF ON SKIN (or hair):
P304: IF INHALED:
P305: IF IN EYES:
P306: IF ON CLOTHING:
P307: IF exposed:
P308: IF exposed or concerned:
P309: IF exposed or 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
P313: Get medical advice/attention
P314: Get Medical advice/attention if you feel unwell
P315: Get immediate medical advice/attention
P320: Specific treatment is urgent (see ... on this label)
P321: Specific treatment (see ... on this label)

P322: Specific measures (see ... on this label)
P330: Rinse mouth
P331: Do NOT induce vomiting
P332: If skin irritation occurs:
P333: If skin irritation or a rash occurs:
P334: Immerse in cool water/wrap in wet bandages
P335: Brush off loose particles from skin
P336: Thaw frosted parts with lukewarm water. Do not rub affected areas
P337: If eye irritation persists:
P338: Remove contact lenses if present and easy to do. continue rinsing
P340: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P341: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P342: If experiencing respiratory symptoms:
P350: Gently wash with soap and water
P351: Rinse cautiously with water for several minutes
P352: Wash with soap and water
P353: Rinse skin with water/shower
P360: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes
P361: Remove/Take off immediately all contaminated clothing
P362: Take off contaminated clothing and wash before reuse
P363: Wash contaminated clothing before reuse
P370: In case of fire:
P371: In case of major fire and large quantities:
P372: Explosion risk in case of fire
P373: DO NOT fight fire when fire reaches explosives
P374: Fight fire with normal precautions from a reasonable distance
P375: Fight fire remotely due to the risk of explosion
P376: Stop leak if safe to do so
P377: Leaking gas fire – do not extinguish unless leak can be stopped safely
P378: Use ... for extinction
P380: Evacuate area
P381: Eliminate all ignition sources if safe to do so
P391 : Collect spillage
P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting
P302+334: IF ON SKIN: Immerse in cool water/wrap in wet bandages
P302+350: IF ON SKIN: Gently wash with soap and water
P302+352: IF ON SKIN: Wash with soap and water
P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P304+312: IF INHALED: Call a POISON CENTER or doctor/physician if you feel unwell
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P304+341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing
P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing
P306+360: IF ON CLOTHING: Rinse immediately contaminated clothing and skin with plenty of water before removing clothes
P307+311: IF exposed: Call a POISON CENTER or doctor/physician

P308+313: IF exposed or concerned: Get medical advice/attention
P309+311: IF exposed or you feel unwell: Call a POISON CENTER or doctor/physician
P332+313: If skin irritation occurs: Get medical advice/attention
P333+313: If skin irritation or a rash occurs: Get medical advice/attention
P335+334: Brush off loose particles from skin. Immerse in cool water/wrap in wet bandages
P337+313: If eye irritation persists get medical advice/attention
P342+311: Call a POISON CENTER or doctor/physician
P370+376: In case of fire: Stop leak if safe to do so
P370+378: In case of fire: Use ... for extinction
P370+380: In case of fire: Evacuate area
P370+380+375: In case of fire: Evacuate area. Fight fire remotely due to the risk of explosion
P371+380+375: In case of major fire and large quantities: Evacuate area. Fight fire remotely due to the risk of explosion

P4.. Storage precautionary statements

P401: Store ...
P402: Store in a dry place
P403: Store in a well ventilated place
P404: Store in a closed container
P405: Store locked up
P406: Store in a corrosive resistant/... container with a resistant inner liner
P407: Maintain air gap between stacks/pallets
P410: Protect from sunlight
P411: Store at temperatures not exceeding ... °C/... °F
P412: Do not expose to temperatures exceeding 50 °C/122 °F
P420: Store away from other materials
P422: Store contents under ...
P402+404: Store in a dry place. Store in a closed container
P403+233: Store in a well ventilated place. Keep container tightly closed
P403+235: Store in a well ventilated place. Keep cool
P410+403: Protect from sunlight. Store in a well ventilated place
P410+412: Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F
P411+235: Store at temperatures not exceeding ... °C/... °F. Keep cool

P5.. Disposal precautionary statements

P501: Dispose of contents/container to ...
--