

Hazard Communication

The 'new' Classification, Labeling and Packaging of Substances and Mixtures (CLP) Regulations introduce the United Nations Globally Harmonised System (GHS) and replace the 'old' Chemicals (Hazard Information and Packaging for Supply) Regulations (CHIP) with respect to hazard communication.

CLP changes some of the criteria for the classification of chemicals including the safety terminology that will be used on future labels and Material Safety Data Sheets MSDSs. The comparison below is between the safety terminology in the 'old' CHIP Regs with that in new CLP Regs, from December 2010.

R-Phrases: i.e. the old Risk Phrases under CHIP Regs

- R1 Explosive when dry
- R2 Risk of explosion by shock, friction, fire or other sources of ignition
- R3 Extreme risk of explosion by shock, friction, fire or other sources of ignition
- R4 Forms very sensitive explosive metallic compounds
- R5 Heating may cause an explosion
- R6 Explosive with or without contact with air
- R7 May cause fire
- R8 Contact with combustible material may cause fire
- R9 Explosive when mixed with combustible material
- R10 Flammable
- R11 Highly flammable
- R12 Extremely flammable
- R14 Reacts violently with water
- R15 Contact with water liberates extremely flammable gases
- R16 Explosive when mixed with oxidizing substances
- R17 Spontaneously flammable in air
- R18 In use, may form flammable/explosive vapour-air mixture
- R19 May form explosive peroxides
- R20 Harmful by inhalation
- R21 Harmful in contact with skin
- R22 Harmful if swallowed
- R23 Toxic by inhalation
- R24 Toxic in contact with skin
- R25 Toxic if swallowed
- R26 Very toxic by inhalation
- R27 Very toxic in contact with skin
- R28 Very toxic if swallowed
- R29 Contact with water liberates toxic gas
- R30 Can become highly flammable in use
- R31 Contact with acids liberates toxic gas
- R32 Contact with acids liberates very toxic gas
- R33 Danger of cumulative effects
- R34 Causes burns
- R35 Causes severe burns

R36 Irritating to eyes
R37 Irritating to respiratory system
R38 Irritating to skin
R39 Danger of very serious irreversible effects
R40 Limited evidence of carcinogenic effect
R41 Risk of serious damage to eyes
R42 May cause sensitization by inhalation
R43 May cause sensitization by skin contact
R44 Risk of explosion if heated under confinement
R45 May cause cancer
R46 May cause heritable genetic damage
R48 Danger of serious damage to health by prolonged exposure
R49 May cause cancer by inhalation
R50 Very toxic to aquatic organisms
R51 Toxic to aquatic organisms
R52 Harmful to aquatic organisms
R53 May cause long term adverse effects in the aquatic environment
R54 Toxic to flora
R55 Toxic to fauna
R56 Toxic to soil organisms
R57 Toxic to bees
R58 May cause long-term adverse effects in the environment
R59 Dangerous for the ozone layer
R60 May impair fertility
R61 may cause harm to the unborn child
R62 Possible risk of impaired fertility
R63 possible risk of harm to the unborn child
R64 May cause harm to breastfed babies
R65 Harmful: may cause lung damage if swallowed
R66 Repeated exposure may cause skin dryness or cracking
R67 Vapours may cause drowsiness or dizziness
R68 Possible risk of irreversible effects

New CLP / GHS Hazard Statements y the old R-Phrases

Note: Some hazard Statements do not have a directly comparable Risk Phrase

Code	Statement	Comparable R Phrase
	EUH0** Special EU Supplementary General Physical Hazard Statements	
EUH001	Explosive when dry	R1
EUH006	Explosive with or without contact with air	R6
EUH014	Reacts violently with water	R14
EUH018	In use, may form flammable/explosive vapour-air mixture	R18
EUH019	May form explosive peroxides	R19
EUH029	Contact with water liberates toxic gas	R29
EUH030	Can become highly flammable in use	R30
EUH031	Contact with acids liberates toxic gas	R31
EUH032	Contact with acids liberates very toxic gas	R32
EUH044	Risk of explosion if heated under confinement	R44
EUH059	Hazardous to the ozone layer	R59
EUH066	Repeated exposure may cause skin dryness or cracking	R66
EUH070	Toxic by eye contact	R39-41
EUH071	Corrosive to the respiratory tract	
	EUH2** Special EU rules for supplemental label elements for certain substances or mixtures	
EUH201	Contains lead. Should not be used on surfaces liable to be chewed or sucked by children	
EUH202	Cyanoacrylate. Danger. Bonds skin and eyes in seconds. Keep out of the reach of children	
EUH203	Contains Chromium (VI). May produce an allergic reaction	
EUH204	Contains isocyanates. See information supplied by the manufacturer	
EUH205	Contains epoxy constituents. See information supplied by the manufacturer	
EUH206	Warning! Do not use together with other products. May release dangerous gases (chlorine)	
EUH207	Warning! Contains cadmium. Dangerous fumes are formed during use. See information supplied by the manufacturer. Comply with the safety instructions	
EUH208	Contains (name of sensitizing substance). May produce an allergic reaction	
EUH209	Can become highly flammable in use or Can become flammable in use	
EUH210	Safety data sheet available on request	
	H2** Physical Hazard Statements	
H200	Unstable explosives	
H201	Explosive; mass explosion hazard	
H202	Explosive, severe projection hazard	
H203	Explosive; fire, blast or projection hazard	
H204	Fire or projection hazard	

Code	Statement	Comparable R Phrase
H 205	May mass explode in fire	
H220	Extremely flammable gas	R12
H221	Flammable gas	R10
H222	Extremely flammable aerosol	R12
H223	Flammable aerosol	R10
H224	Extremely flammable liquid and vapour	R12
H225	Highly flammable liquid and vapour	R11
H226	Flammable liquid and vapour	R10
H228	Flammable solid	R10
H240	Heating may cause an explosion	R5
H241	Heating may cause fire or explosion	R5, R7
H242	Heating may cause a fire	R7, R12
H250	Catches fire spontaneously if exposed to air	R17
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	R15-17
H261	In contact with water releases flammable gas	R15
H270	May cause or intensify fire; oxidizer	R8
H271	May cause fire or explosion; strong oxidizer	R9
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 Hazard Statements	
H300	Fatal if swallowed	R28
H301	Toxic if swallowed	R25
H302	Harmful if swallowed	R22
H304	May be fatal if swallowed and enters airways	R65
H310	Fatal in contact with skin	R27
H311	Toxic in contact with skin	R24
H312	Harmful in contact with skin	R21
H314	Causes severe skin burns and eye damage	R34, R35
H315	Causes skin irritation	R38
H317	May cause an allergic skin reaction	R43
H318	Causes serious eye damage	R41
H319	Causes serious eye irritation	R36
H330	Fatal if inhaled	R26
H331	Toxic if inhaled	R23
H332	Harmful if inhaled	R20
H334	May cause allergy or asthma symptoms or breathing difficulties if inhaled	R42
H335	May cause respiratory irritation	R37
H336	May cause drowsiness or dizziness	R67
H340	May cause genetic defects (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	R46

Code	Statement	Comparable R Phrase
H341	Suspected of causing genetic effects (state route of exposure if it is conclusively proven that no other routes of exposure can cause the hazard)	R68
H350	May cause cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	R45
H350i	May cause cancer by inhalation	R49
H351	Suspected of causing cancer (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	R40
H360	May damage fertility (H360F) or the unborn child (H360D) (state specific effect if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	R60 (H360F), R61 (H360D)
H361	Suspected of damaging fertility (H361f) or the unborn child (H361d) (state specific effect if known) (state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard)	R62 (H361f), R63 (H361d)
H362	May cause harm to breast fed children	R64
H370	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)	R39/23, R39/24, R39/25, R39/26, R39/27, R39/28
H371	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)	R68/20, R68/21, R68/22
H372	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)	R48/23, R48/24, R48/25
H373	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)	R48/20, R48/21, R48/22
	H4** Environmental Hazard Statements	
H400	Very toxic to aquatic life	R50
H401	To avoid risks to human health and the environment, comply with the instructions for use	
H410	Very toxic to aquatic life with long lasting effects	R53
H411	Toxic to aquatic life with long lasting effects	R51-53
H412	Harmful to aquatic life with long lasting effects	R52-53
H413	May cause long lasting harmful effects to aquatic life	R53

S-Phrases i.e. the old Safety Phrases under CHIP Regs

- S1 Keep locked up
- S2 Keep out of reach of children
- S3 Keep in a cool place
- S4 Keep away from living quarters
- S5 Keep contents under..... (appropriate liquid to be specified by manufacturer)
- S6 Keep under..... (inert gas to be specified by manufacturer)
- S7 Keep container tightly closed
- S8 Keep container dry
- S9 Keep container in a well ventilated place
- S12 Do not keep container sealed
- S13 Keep away from food, drink and animal feedstuffs
- S14 Keep away from (incompatible materials to be indicated by the manufacturer)
- S14a Keep away from acids, alkalis, heavy metal salts and reducing substances
- S14b Keep away from reducing substances (e.g. amines), acids, alkalis and heavy metal compounds (e.g. activators, drying agents, metallic soaps)
- S15 Keep away from heat
- S16 Keep away from sources of ignition – no smoking
- S17 Keep away from combustible material
- S18 Handle and open container with care
- S20 When using do not eat or drink
- S21 When using do not smoke
- S22 Do not breathe dust
- S23 Do not breathe gas/fumes/vapour/spray (appropriate wording to be specified by the manufacturer)
- S23a Do not breathe vapour/aerosol
- S23b Do not breathe gas/vapour
- S23c Do not breathe gas/vapour/aerosol
- S23d Do not breathe vapour
- S23e Do not breathe aerosol
- S23f Do not breathe gas
- S23g Do not breathe smoke
- S24 Avoid contact with skin
- S25 Avoid contact with eyes
- S26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice
- S27 Take off all contaminated clothing immediately
- S28 After contact with skin, wash immediately with plenty of..... (to be specified by the manufacturer)
- S28a After contact with skin, wash immediately with plenty of water
- S28b After contact with skin, wash immediately with plenty of water and soap
- S28c After contact with skin, wash immediately with acetic acid 3% and plenty of water
- S28d After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water
- S28e After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water

- S28f After contact with skin, wash immediately with plenty of a 1:1 solution of polyethylene glycol:ethanol
- S28g After contact with skin, wash immediately with plenty of cuprous sulphate solution, 2%
- S28h After contact with skin, wash immediately with plenty of lutrol
- S28i After contact with skin, wash immediately with plenty of propylene glycol
- S28j After contact with skin, wash immediately with plenty of propylene glycol 400 (Roticlean)
- S29 Do not empty into drains
- S30 Never add water to this product
- S33 Take precautionary measures against static discharges
- S35 This material and its container must be disposed of in a safe way
- S36 Wear suitable protective clothing
- S37 Wear suitable gloves
- S38 In case of insufficient ventilation wear suitable respiratory equipment
- S39 Wear eye/face protection
- S40 To clean the floor and all objects contaminated by this material, use..... (to be specified by the manufacturer)
- S40a To clean the floor and all objects contaminated by this material, use plenty of water
- S40b To clean the floor and all objects contaminated by this material, use diluted alkaline solution
- S40c To clean the floor and all objects contaminated by this material, use iodized active carbon
- S41 In case of fire or explosion do not breathe fumes
- S42 During fumigation/spraying wear suitable respiratory protective equipment (appropriate wording to be specified by the manufacturer).
- S42a During fumigation wear suitable respiratory equipment
- S42b During spraying use suitable respiratory equipment
- S43 In case of fire, use..... (in the space indicate the precise type of fire fighting equipment. If water increases the risk, add 'Never use water')
- S43a For extinguishing, use sand, earth, powder or foam
- S43b Never use water
- S45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible)
- S46 If swallowed, seek medical advice immediately and show this container or label
- S47 Keep at a temperature not exceeding...°C (to be specified by the manufacturer)
- S48 Keep wet with..... (appropriate material to be specified by manufacturer)
- S48a Keep wet with water
- S49 Keep only in the original container
- S50 Do not mix with..... (to be specified by manufacturer)
- S50a Do not mix with peroxide activators and reducing agents
- S50b Do not mix with acids
- S50c Do not mix with alkali
- S50d Do not mix with other chemicals
- S51 Use in only well ventilated areas
- S52 Not recommended for interior use on large surface areas
- S53 Avoid exposure – obtain special instructions before use

- S56 Dispose of this material and its container to hazardous or special waste collection point
- S57 Use appropriate container to avoid environmental contamination
- S59 Refer to manufacturer/supplier for information on recovery/recycling
- S60 This material and its container must be disposed of as hazardous waste
- S61 Avoid release to the environment. Refer to special instructions/safety data sheets
- S62 If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label
- S63 In case of accident by inhalation; remove casualty to fresh air and keep at rest
- S64 If swallowed, and person is conscious, rinse mouth with water

New GHS / CLP Precautionary Statements v the old S- Phrases

Note|: Many Precautionary Statements do not have a comparable Safety Phrase

Code	Statement	Comparable S Phrase
	P1** General Precautionary Statements	
P101	If medical advice is needed, have product container or label at hand	S45
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 possible contact with water, because of violent reaction and possible flash fire	
P230	Keep wetted with...	S5
P231	Handle under inert gas	S6
P232	Protect from moisture	S8
P233	Keep container tightly closed	S7
P234	Keep only in original container	
P235	Keep cool	S3
P240	Ground / bond container and receiving equipment	
P241	Use explosion-proof electrical / ventilating / lighting equipment	
P242	Use only non-sparking tools	
P243	Take precautionary measures against static discharge	S33
P244	Keep reduction valves free from grease or 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 / vapour / spray	S23
P261	Avoid breathing dust / fume / gas / mist / vapour / spray	S24
P262	Do not get in eyes, on skin, or on clothing	S25
P263	Avoid contact during pregnancy / while nursing	
P264	Wash thoroughly after handling	S28
P270	Do not eat, drink or smoke when using this product	S20-21
P271	Use only outdoors or in a well-ventilated area	
P272	Contaminated work clothing should not be allowed out of the work-place	
P273	Avoid release to the environment	
P280	Wear protective gloves / protective clothing / eye protection / face protection	S36
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	S38

Code	Statement	Comparable S Phrase
	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 if you feel unwell:	
P310	Immediately call a POISON CENTRE or doctor / physician	
P311	Call a POISON CENTRE or doctor / physician	
P312	Call a POISON CENTRE or doctor / physician if you feel unwell	
P313	Get medical advice / attention	
P314	Get medical advice / attention if you feel unwell	S45
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	S64
P331	Do not induce vomiting	
P332	If skin irritation occurs:	
P333	If skin irritation or 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 area.	
P337	If eye irritation persists:	
P338	Remove contact lenses, if present and easy to do so. Continue rinsing	
P340	Remove to fresh air and keep at rest in a position comfortable for breathing	S63
P341	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing	
P342	If experiencing respiratory symptoms:	
P350	Gently wash with plenty of soap and water	
P351	Rinse cautiously with water for several minutes	S28
P352	Wash with plenty of 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	S27
P362	Take off all 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 reached explosives	

Code	Statement	Comparable S Phrase
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	
P390	Absorb spillage to prevent material damage	
P391	Collect spillage	
	P4-- Storage Precautionary Statements	
P401	Store ...	
P402	Store in a dry place	S8
P403	Store in a well ventilated place	S9
P404	Store in a closed container	S7
P405	Store locked up	S1
P406	Store in corrosive resistant / ... container with a resistant inner liner	
P407	Maintain air gap between stacks / pallets	
P410	Protect from sunlight	
P411	Store at a temperature not exceeding ... °C/ ..°F	
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	
P420	Store away from other materials	
P422	Store contents under ...	
	P5-- Disposal Precautionary Statements	
P501	Dispose of contents / container to ...	