

## 1. Scope

This document provides information on the way chemical hazards are classified and communicated to users through the Global Harmonised System of Classification and Labelling of Chemicals (GHS). It provides guidance to those who order and use hazardous chemicals and chemical products and also those with responsibility for completing COSHH assessments.

## Contents

1. Scope.....	1
Contents.....	1
2. Introduction .....	2
3. Hazard Statements .....	3
4. Hazard Pictograms.....	3
5. Precautionary Statements .....	3
6. Safety Data Sheets .....	4
7. Implications of the legislative changes.....	5
8. Appendix One .....	6
8.1 GHS Physical Hazard Statements .....	6
8.2 GHS Health Hazard Statements .....	7
8.3 GHS Environmental Hazard Statements.....	8
8.4 CHIP Risk Phrases .....	8
9. Appendix Two. ....	14
9.1 GHS Hazard Pictograms.....	14
9.2 CHIP 4 Pictograms.....	15
10. Appendix Three.....	16
10.1 GHS Precautionary statements - general actions .....	16
10.2 GHS Precautionary statements - preventative measures.....	16
10.3 GHS Precautionary statements - emergency response. ....	17
10.4 GHS Precautionary statements - storage measures. ....	19
10.5 GHS Precautionary statements - Disposal measures. ....	20
11 Appendix four.....	20
11.1 Precautionary Pictograms .....	20

## 2. Introduction

The Global Harmonised system of Classification and Labelling of Chemicals (GHS) was accepted by the UN in 2001 with the intention of ensuring consistent, standardised chemical hazard information is available worldwide. The agreement provides a basis for communicating chemical hazard information to users, to help them clearly recognise the hazardous properties of the substances they use.

GHS has been adopted by the European Union (EU) and implemented as EC 1272/2008 The Classification, Labelling and Packaging of Substances and Mixtures regulations. These regulations are directly acting in all member states, and will be fully implemented by June 1st 2015. The regulations provide criteria for hazard classification and outline the duties for manufacturers and suppliers to notify both the EU's Classification & labelling Inventory and downstream users of chemical hazard information.

- Classification.

Suppliers are required to classify substances according to a standardised description of the hazard type, either by self classification or through mandatory EU harmonised classification.

- Labelling.

Suppliers must label a substance according to CLP regulations. Labels should contain supplier contact details, the approved or trade name of the substance, the nominal quantity supplied and all relevant hazard statements, pictograms, signal words and precautionary statements relating to the hazards posed.

- Safety Data Sheets.

Suppliers must provide a safety data sheet to include information about the properties of a substance, the hazards posed, handling, disposal and transport instructions and emergency information including exposure control measures.

- Packaging standards.

The regulations outline the requirements for safe and secure packaging to prevent the accidental release of hazardous substances and to ensure the compatibility of packaging materials with the substance. Packaging that complies with the International agreement on Carriage of Dangerous Goods (ADR) requirement is deemed suitable.

In the UK, the supply and hazard classification of substances is regulated by the Chemicals (Hazard Information and Packaging for Supply) 2009 regulations (CHIP 4). These regulations implement both the Dangerous Substances Directive (67/548/EEC) and the Dangerous Preparations Directive (1999/45/EC), and also

incorporate the recent changes to EU legislation required by CLP.

As with the CLP regulations, CHIP requires suppliers to identify the hazards of the chemicals they supply, provide information regarding those hazards and package their products safely. From June 2015 CHIP will be revoked and fully superseded by CLP.

### 3. Hazard Statements

These are standardised phrases and alpha-numerical codes used to describe particular hazards (similar to Risk Phrases). The coding relates to a primary hazard, followed by a two digit sequential code and descriptive text.

- Physical Hazards:       **H 2 ##**           e.g. **H221** Flammable gas.
- Health Hazards:       **H 3 ##**           e.g. **H312** Harmful in contact with skin
- Environmental:       **H 4 ##**           e.g. **H401** Toxic to aquatic life

The system also includes two signal words which appear on chemical labels to relate the severity of the hazards to the user.

- **Warning**: indicates a less severe hazard
- **Danger**: indicates a more severe hazard

A list of Hazard Statements and Risk Phrases (R-Phrases will be replaced from June 2015) is provided in appendix one.

### 4. Hazard Pictograms

The orange hazard warning symbols used under CHIP 4 will be superseded by a series of 9 GHS pictograms within a red diamond, from June 2015. Until that date, a transitional period is in operation with both systems recognised. This is to allow a gradual change to the new GHS system. Appendix two contains details of both pictogram systems.

### 5. Precautionary Statements

These are standardised phrases and alpha-numerical codes used to convey advice regarding the handling of chemical substances. As with hazard statements, the precautionary statements consist of a code that describes a particular aspect of chemical handling. This is followed by a sequential two digit number and a written description.

- General precautions   **P 1 ##**           e.g. **P102** Keep out of reach of children
- Preventative measures **P 2 ##**           e.g. **P280** Wear protective gloves/clothing/eye protection.

- Emergency response    **P 3 ##**            e.g. **P307** If exposed ...
- Storage                    **P 4 ##**            e.g. **P404** Store in a closed container.
- Disposal                  **P 5 ##**            e.g. **P501** Dispose of contents to...

A full list of precautionary statements is given in appendix three.

## 6. Safety Data Sheets

Safety data sheets are the primary mechanism that suppliers and manufacturers use to communicate appropriate information regarding the safe use of their products. They are not a risk assessment in themselves but provide necessary information to assist you in carrying out your own risk assessment as required by the COSHH 2002 regulations. Safety data sheets must be supplied to users under the following circumstances:

- The product is classified as hazardous under CLP regulations.
- The substance (and from 1 June 2015 a mixture) meets the criteria for classification as hazardous according to CLP.
- A mixture meets the criteria for classification as dangerous according to the Dangerous Preparations Directive 1999/45/EC (until 1 June 2015).
- A substance is persistent, bioaccumulative and toxic (PBT) or very persistent and very bioaccumulative (vPvB), according to the criteria given in Annex XIII of REACH.
- A substance is included in the candidate list for eventual authorisation according to Article 59 (1) of REACH for any other reasons.

Safety data sheets should follow the internationally agreed format as follows:

1. Identification of the substance/mixture and of the company/undertaking;
2. Hazards identification;
3. Composition/information on ingredients;
4. First-aid measures;
5. Fire-fighting measures;
6. Accidental release measures;
7. Handling and storage;
8. Exposure controls/personal protection;
9. Physical and chemical properties;
10. Stability and reactivity;

11. Toxicological information;
12. Ecological information;
13. Disposal considerations;
14. Transport information;
15. Regulatory information;
16. Other information.

Manufacturers and suppliers are required to update safety data sheets and communicate the new information when:

- New hazard information or information that may affect the risk management measures becomes available;
- When a substance or mixture is classified according to the CLP Regulation
- Once an authorisation under REACH is granted or refused;
- Once a restriction under REACH has been imposed.

## **7. Implications of the legislative changes.**

The GHS system may result in a change of hazard classification for some substances or mixtures. COSHH assessments should be reviewed regularly together with current Safety Data Sheets and updated to reflect any change to the hazard classification and or precautionary measures. Where changes are made to COSHH assessments the details should be communicated to all staff identified in the COSHH assessment.

Schools/services should ensure they have the most up to date safety data sheets available from their suppliers to assist this process. Obsolete safety data sheets should be archived and kept for 10 years, as required by Article 36 of the REACH regulations.

Currently suppliers are required to classify and label their products according to both CLP and CHIP regulations. Staff should be aware that there are two labelling systems in parallel operation until June 2015; and be given suitable instruction to enable them to recognise and understand both systems. From 2nd June 2015 suppliers must classify, label and package according to CLP regulations only, the CHIP regulations will be revoked at this time.

## 8. Appendix One

### 8.1 GHS Physical Hazard Statements

<b>Hazard Code</b>	<b>Hazard Statement</b>
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 aerosol
H223	Flammable aerosol
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 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; oxidiser
H271	May cause fire or explosion; strong oxidiser.
H272	May intensify fire; oxidiser

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

## 8.2 GHS Health Hazard Statements

<b>Hazard Code</b>	<b>Hazard Statement</b>
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.

### 8.3 GHS Environmental Hazard Statements

<b>Hazard Code</b>	<b>Hazard Statement</b>
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

### 8.4 CHIP Risk Phrases

Note: These Risk phrases will be superseded by GHS Hazard Statements from June 2015.

<b>Risk Code</b>	<b>Risk Phrase</b>
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 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
R14/15	Reacts violently with water liberating extremely flammable gas
R15	Contact with water liberates extremely flammable gas
R15/29	Contact with water liberates toxic, extremely flammable gas
R16	Explosive when mixed with oxidising 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
R20/21	Harmful by inhalation and in contact with skin
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R20/22	Harmful by inhalation and if swallowed
R21	Harmful in contact with skin
R21/22	Harmful in contact with skin and if swallowed
R22	Harmful if swallowed
R23	Toxic by inhalation
R23/24	Toxic by inhalation and in contact with skin
R23/24/25	Toxic by inhalation, in contact with skin and if swallowed
R23/25	Toxic by inhalation and if swallowed
R24	Toxic in contact with skin
R24/25	Toxic in contact with skin and if swallowed

R25	Toxic if swallowed
R26	Very toxic by inhalation
R26/27	Very toxic by inhalation and in contact with skin
R26/27/28	Very toxic by inhalation, in contact with skin and if swallowed
R26/28	Very toxic by inhalation and if swallowed
R27	Very toxic in contact with skin
R27/28	Very toxic in contact with skin and if swallowed
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
R36/37	Irritating to eyes and respiratory system
R36/37/38	Irritating to eyes, respiratory system and skin
R36/38	Irritating to eyes and skin
R37	Irritating to respiratory system
R37/38	Irritating to respiratory system and skin
R38	Irritating to skin
R39	Danger of very serious irreversible effects
R39/23	Toxic: danger of very serious irreversible effects through inhalation
R39/23/24	Toxic: danger of very serious irreversible effects through inhalation and in contact with skin
R39/23/24/25	Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R39/23/25	Toxic: danger of very serious irreversible effects through inhalation and if swallowed
R39/24	Toxic: danger of very serious irreversible effects in contact with skin
R39/24/25	Toxic: danger of very serious irreversible effects in contact with skin and if swallowed
R39/25	Toxic: danger of very serious irreversible effects if swallowed










R39/26	Very Toxic: danger of very serious irreversible effects through inhalation
R39/26/27	Very Toxic: danger of very serious irreversible effects through inhalation and in contact with skin
R39/26/27/28	Very Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed
R39/26/28	Very Toxic: danger of very serious irreversible effects through inhalation and if swallowed
R39/27	Very Toxic: danger of very serious irreversible effects in contact with skin
R39/27/28	Very Toxic: danger of very serious irreversible effects in contact with skin and if swallowed
R39/28	Very Toxic: danger of very serious irreversible effects if swallowed
R40	Limited evidence of a carcinogenic effect
R41	Risk of serious damage to eyes
R42	May cause sensitisation by inhalation
R43	May cause sensitisation by skin contact
R42/43	May cause sensitisation by inhalation and 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
R48/20	Harmful: danger of serious damage to health by prolonged exposure through inhalation
R48/20/21	Harmful: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin
R48/20/21/22	Harmful: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
R48/21	Harmful: danger of serious damage to health by prolonged exposure in contact with skin
R48/21/22	Harmful: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
R48/22	Harmful: danger of serious damage to health by prolonged exposure if swallowed
R48/23	Toxic: danger of serious damage to health by prolonged exposure through inhalation
R48/23/24	Toxic: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin
R48/23/24/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation, in contact with skin and if swallowed
R48/23/25	Toxic: danger of serious damage to health by prolonged exposure through inhalation and if swallowed

R48/24	Toxic: danger of serious damage to health by prolonged exposure in contact with skin
R48/24/25	Toxic: danger of serious damage to health by prolonged exposure in contact with skin and if swallowed
R48/25	Toxic: danger of serious damage to health by prolonged exposure if swallowed
R49	May cause cancer by inhalation
R50	Very toxic to aquatic organisms
R50/53	Very toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R51	Toxic to aquatic organisms
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R52	Harmful to aquatic organisms
R52/53	Harmful to aquatic organisms, may cause long-term adverse effects in the aquatic environment
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 breast-fed babies
R65	Harmful: may cause lung damage if swallowed
R66	Repeated exposure may cause skin dryness or cracking
R67	Vapours may cause drowsiness and dizziness
R68	Possible risk of irreversible effects
R68/20	Harmful: possible risk of irreversible effects through inhalation
R68/20/21	Harmful: possible risk of irreversible effects through inhalation and in contact with skin

R68/20/21/22	Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed
R68/20/22	Harmful: possible risk of irreversible effects through inhalation and if swallowed
R68/21	Harmful: possible risk of irreversible effects in contact with skin
R68/21/22	Harmful: possible risk of irreversible effects in contact with skin and if swallowed
R68/22	Harmful: possible risk of irreversible effects if swallowed








## 9. Appendix Two.

### 9.1 GHS Hazard Pictograms

 <b>Explosive</b>	 <b>Flammable</b>	 <b>Oxidizers</b>
 <b>Corrosive</b>	 <b>Acute Toxicity Cat 4</b> <b>Irritant</b> <b>Skin Sensitiser</b>	 <b>Acute Toxicity</b> <b>Cat 1, 2 &amp; 3</b>
 <b>Serious Systemic health hazard -</b> Carcinogen Respiratory Sensitiser Reproductive Toxicity Mutagenicity	 <b>Gas under pressure</b>	 <b>Hazardous to the aquatic environment.</b>

## 9.2 CHIP 4 Pictograms

Note: These symbols will be superseded by GHS Hazard pictograms from June 2015.

		
<b>Explosive</b>	<b>Flammable</b>	<b>Oxidizer</b>
		
<b>Harmful</b> <b>Irritant</b>	<b>Toxic</b> <b>Very Toxic</b>	<b>Corrosive</b>
		
<b>Dangerous for the environment</b>		

## 10. Appendix Three

### 10.1 GHS Precautionary statements - general actions

<b>Precautionary Code</b>	<b>Precautionary Statement</b>
P101	If medical advice is needed, have product container or label to hand.
P102	Keep out of reach of children
P103	Read label before use

### 10.2 GHS Precautionary statements - preventative measures.

<b>Precautionary Code</b>	<b>Precautionary Statement</b>
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 onto an open flame or other ignition source
P220	Keep/Store away from clothing/.../combustible materials
P221	Take any precaution to avoid mixing with combustible materials
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/ventilation/lighting/.../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/fumes/gas/mist/vapours/spray
P261	Avoid breathing dust/fumes/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
P285	In case of inadequate ventilation wear respiratory protection
P231	Handle under inert gas. Protect from moisture
P232	Handle under inert gas. Protect from moisture
P235	Keep cool. Protect from sunlight.

### 10.3 GHS Precautionary statements - emergency response.

Precautionary Code	Precautionary Statement
P301	If Swallowed:
P302	If on skin:
P303	If on skin (or hair):
P304	If inhaled:
P305	If in eyes:
P307	If exposed
P308	If exposed or concerned:

P309	If exposed or 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
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
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. 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 plenty of soap and water
P351	Rinse cautiously with water for several minutes
P352	Wash with plenty of soap and water
P353	Rinse with water/shower
P360	Rinse immediately contaminate clothing and skin with plenty of water before removing clothing
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
P374	Fight fire with normal precautions from a reasonable distance
P375	Fight fire remotely due to 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

#### 10.4 GHS Precautionary statements - storage measures.

<b>Precautionary Code</b>	<b>Precautionary Statement</b>
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 corrosive resistant/.../container with a resistant liner
P407	Maintain air gap between pallets
P410	Protect from sunlight
P411	Store at temperatures not exceeding..... °C
P412	Do not expose to temperatures exceeding 50°C
P413	Store bulk masses greater then ...kg at temperatures not exceeding ... °C
P420	Store away from other materials
P422	Store contents under...

## 10.5 GHS Precautionary statements - Disposal measures.

Precautionary Code	Precautionary Statement
P501	Dispose of contents/container to ...

## 11 Appendix four

### 11.1 Precautionary Pictograms

