



# Health and Safety Guidance

## Guidance on the Classification, Labelling and Packaging (CLP) Regulations

### GUIDANCE/29/CLP/11

This guidance is aimed at those handling hazardous chemicals; from single substances such as acids, to mixtures including paints and cleaning solutions.

This document provides information on the changes to the way chemical substances are classified and labelled as a result of the European Union's Classification, Labelling and Packing of Substances and Mixtures Regulations.

Further information and advice may be obtained from the Health and Safety Unit.

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## 1. INTRODUCTION

Worldwide there have been many different systems for classifying and labelling chemicals. Consequently, the same substance may have been classified at the same time as toxic, non-hazardous or harmful to health – depending in which country the classification has been made. To harmonise these different systems the UN has developed the Global Harmonised System of Classification and Labelling of Chemicals (GHS).

GHS introduces a set of globally harmonised criteria for the classification of physical, health and environmental hazards.

GHS also establishes a globally harmonised scheme for hazard communication. This includes the introduction and modification of:

- Hazard classifications
- Hazard pictograms
- Signal words
- Hazard statements

The European Union (EU) has adopted GHS and implemented it in member states as an EU Regulation; the Classification, Labelling and Packaging of Substances and Mixtures (CLP) Regulations.

The current Chemicals (Hazard Information and Packaging for Supply) Regulations (CHIP) in force in the UK will be repealed in full when the new Regulation is fully in force (1<sup>st</sup> June 2015). As a result of the CLP Regulations the Health and Safety Executive have withdrawn the Approved Supply List, which has been re-enacted in Tables 3.1 and 3.2 of Part 3 of Annex VI to the CLP Regulation. Annex VI containing the harmonised chemical hazard classifications can be found at the following website <http://esis.jrc.ec.europa.eu/index.php?PGM=cla> and selecting 'Search Annex VI' in the drop down menu.

The University's chemical safety database 'HAZDAT' has been updated to reflect these changes; chemical hazard classifications can be found under the CHIP and CLP headings.

## 2. IMPLICATIONS FOR SCHOOLS

Schools should update their risk assessments to reflect changes in classification and hazard statements as and when they receive chemicals with the new CLP classification and labelling.

Chemical Hazard and Risk Assessments must also be reviewed if there is a significant change (i.e. a change in the substance or the form of a substance used, a change in work practices, where results of health surveillance have identified work-related ill health, where there is new information on the health effects of exposure to a substance) or at least every 5 years.

## 3. HAZARD CLASSIFICATION

GHS introduces a global system for the classification of chemical hazards. This may result in a change of hazard for certain chemicals under present classification regulations. The level of protection and warning offered to workers, consumers and the

environment should not be reduced as a result of harmonising the classification and labelling systems.

#### **4. HAZARD PICTOGRAMS**

Under GHS the square orange hazard pictograms are to be replaced by pictograms in a red diamond. A number of the symbols shall remain the same to warn of a given hazard, such as explosive, oxidising, flammable and corrosive. New symbols will also be introduced under the scheme for substances with acute and chronic toxicity.

Appendix 1 shows a comparison between old and new pictograms and Appendix 3 shows the difference between an old chemical label and new chemical label.

#### **5. SIGNAL WORDS**

GHS will introduce two signal words to all labels to indicate the level of severity of the hazard. Danger is to be used for the more severe hazard categories, whilst Warning is to be used for the less severe.

#### **6. HAZARD STATEMENTS AND PRECAUTIONARY STATEMENTS**

Hazard statements will be assigned to a hazard class and category to describe the nature and where appropriate the degree of the hazard. The statements will replace the old system of Risk Phrases.

The codes will be in the form '*Hnxx*' where *H* stands for "hazard statement"; *n* stands for the type of hazard: 2 for physical hazards, 3 for health hazards and 4 for environmental hazards; and *xx* is a sequential numbering scheme.

For example, a safety data sheet or label may bear a statement such as "May be corrosive to metals (*H290*)". *H* indicates a Hazard, the 2 indicates a physical hazard, and *90* is part of the numbering scheme.











The CLP Regs have retained numerical risk phrases which do not have an equivalent under GHS, as well as some intended for use in very specific circumstances, the codes for which are identified by *EUHxxx*.

A list of Hazard Statements are given in Appendix 2.

Precautionary statements will replace the existing safety phrases, and will provide further information on recommended precautions to be taken when using or storing the chemical.

#### **7. TIME SCALE**

The CLP Regulations provide a transition period to allow a gradual migration from the existing system to the new regime. The Regulations apply to the classification of substances from 1<sup>st</sup> December 2010 and to the classification of mixtures from 1 June 2015. The transitional period will end on 1<sup>st</sup> June 2015 when the CLP Regulations come fully into force.

<i>Old Hazard Pictograms</i>	<i>New GHS Pictograms</i>	<i>Hazard Classes</i>	
		Explosive Self Reactive Organic Peroxide	
		Flammable Gases Flammable Aerosols Flammable Liquids Flammable Solids Pyrophoric	Self-Reactive Self-Heating Contact with water, emits flammable gas Organic peroxide
		Oxidizing gases Oxidizing liquids Oxidizing solids	
		Acute toxicity	
		Respiratory sensitiser Mutagen Carcinogen Reproductive toxicity Systemic Target Organ Toxicity (STOT) Aspiration hazard	
		Corrosive (causes severe skin burns and eye damage) Serious eye damage Corrosive to metals	
		Harmful Skin irritation, Serious eye irritation, Respiratory irritant Skin sensitiser Narcotic	
		Environmental Toxicity Acute Hazard Chronic Hazard	
		Gases under pressure	

## Physical Hazards

<b>Hazard Statement 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 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

<b>Hazard Statement 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

## Environmental Hazards

<b>Hazard Statement 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

## EU Specific Hazard Statements

<b>Hazard Statement Code</b>	<b>Hazard Statement</b>
EUH001	Explosive when dry
EUH006	Explosive with or without contact with air
EUH014	Reacts violently with water
EUH018	In use may form flammable/explosive vapour-air mixture
EUH019	May form explosive peroxides
EUH044	Risk of explosion if heated under confinement
EUH029	Contact with water liberates toxic gas
EUH031	Contact with acids liberates toxic gas
EUH032	Contact with acids liberates very toxic gas
EUH066	Repeated exposure may cause skin dryness or cracking
EUH070	Toxic by eye contact
EUH071	Corrosive to the respiratory tract
EUH059	Hazardous to the ozone layer



Old CHIP Labelling

sample

30.09.06  
NO, UK, B, NL, FR, DE

1.06009.2500

2.5 | IMO: METHANOL  
ICAO: METHANOL

CH<sub>3</sub>OH  
1 l = 0,79 kg  
M = 32,04 g/mol

**Specification:**

Purity (GC)	≥ 99,9	%
Identity (IR)	conforms	%
Appearance	clear	%
Acidity	≤ 10	mg/l
Solubility in water	≤ 0,0002	mg/g
Alkalinity	≤ 0,0002	mg/g
Density (20 °C/20 °C)	0,791 - 0,793	g/cm <sup>3</sup>
Boiling point	64 - 65	°C
Flash point (CL)	≤ 0,6	°C
Acid value	≤ 0,01	mg/g
Ammonia	≤ 0,01	mg/g
Formaldehyde	≤ 0,01	mg/g
Residual carbonizable substances	≤ 0,01	mg/g
Carbonic compounds	≤ 0,01	mg/g
Free SO <sub>2</sub>	≤ 0,5	ppm
Sulphur (SO <sub>2</sub> )	≤ 1	ppm
Heavy metal (max)	≤ 0,0005	ppm
permissible limits (in %)		
Ag (Silver)	≤ 0,00002	
Al (Aluminum)	≤ 0,00002	
As (Arsenic)	≤ 0,00002	
Au (Gold)	≤ 0,00002	
Ba (Barium)	≤ 0,00002	
Be (Beryllium)	≤ 0,00002	
Bi (Bismuth)	≤ 0,00002	
Ca (Calcium)	≤ 0,00002	
Cd (Cadmium)	≤ 0,00002	
Co (Cobalt)	≤ 0,00002	
Cr (Chromium)	≤ 0,00002	
Cu (Copper)	≤ 0,00002	
Fe (Iron)	≤ 0,00002	
I (Iodine)	≤ 0,00002	
Li (Lithium)	≤ 0,00002	
Mn (Manganese)	≤ 0,00002	
Mo (Molybdenum)	≤ 0,00002	
Ni (Nickel)	≤ 0,00002	
Pb (Lead)	≤ 0,00002	
Ph (Phenol)	≤ 0,00002	
Pt (Platinum)	≤ 0,00002	
Sn (Tin)	≤ 0,00002	
Ti (Titanium)	≤ 0,00002	
V (Vanadium)	≤ 0,00002	
Zn (Zinc)	≤ 0,00002	
Zr (Zirconium)	≤ 0,00002	
Empirical residue	≤ 0,05	%
Water	≤ 0,05	%

ACS, ISO reagent, Ph Eur reagent

Leichtentzündlich  
Highly flammable

Facilement inflammable  
Inflammable

Facilmente inflamabile  
Inflammabile

Facilmente inflamabile  
Inflammabile

Facilmente inflamável  
Licht ontvlambaar

Giftig  
Toxic

Toxic  
Toxic

Toxic  
Toxic

Vergiftig  
Vergiftig




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Metanol p.a.

Metanol p.a.

Methanol pro analyse

ACS, ISO, Reag. Ph Eur

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Leichtentzündlich. Giftig beim Einatmen, Verschlucken und Berührung mit der Haut. Giftig: ernste Gefahr irreversiblen Schadens durch Einatmen, Berührung mit der Haut und durch Verschlucken. \* Behälter dicht geschlossen halten. Von Zündquellen fernhalten - Nicht rauchen. Bei der Arbeit geeignete Schutzhandschuhe und Schutzkleidung tragen. Bei Unfall oder Unwohlsein sofort Arzt hinzuziehen (wenn möglich dieses Etikett vorzeigen). Highly flammable. Toxic by inhalation, in contact with skin and if swallowed. Toxic: danger of very serious irreversible effects through inhalation, in contact with skin and if swallowed. \* Keep container tightly closed. Keep away from sources of ignition - No smoking. Wear suitable protective clothing and gloves. In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible). Facilement inflammable. Toxique par inhalation, par contact avec la peau et par ingestion. Toxique: danger d'effets irréversibles très graves par inhalation, par contact avec la peau et par ingestion. \* Conserver le récipient bien fermé. Conserver à l'écart de toute flamme ou source d'étincelles - Ne pas fumer. Porter un vêtement de protection et des gants appropriés. En cas d'accident ou de malaise consulter immédiatement un médecin (si possible lui montrer l'étiquette). Facilmente inflamabile. Tossico per inalazione, contatto con la pelle e per ingestione. Tossico: pericolo di effetti irreversibili molto gravi per inalazione, in contatto con la pelle e per ingestione. \* Conservare il recipiente ben chiuso. Conservare lontano da fiamme e scintille - Non fumare. Usare indumenti protettivi e guanti adatti. In caso di incidente o di malessere consultare immediatamente il medico (se possibile, mostrargli l'etichetta). Fácilmente inflamable. Tóxico por inhalación, por ingestión y en contacto con la piel. Tóxico: peligro de efectos irreversibles muy graves por inhalación, contacto con la piel e ingestión. \* Manténgase el recipiente bien cerrado. Conservar alejado de toda flama o fuente de chispas - No fumar. Usar indumentaria y guantes de protección adecuados. En caso de accidente o de malestar, acúzase inmediatamente al médico (si es posible, muéstrale la etiqueta). Licht ontvlambaar. Vergiftig bij inademing, opname door de mond en aanraking met de huid. Vergiftig: gevaar voor ernstige onomkeerbare effecten bij inademing, aanraking met de huid en opname door de mond. \* In goed gesloten verpakking bewaren. Verreukst niet houden van contact met open vlammen. \* Niet roken. Draag geschikte handschoenen/beschermende kleding. Bij een ongeval of van ongemak, raadpleeg onmiddellijk een arts/raadpleeg (indien mogelijk hem dit etiket tonen).

UN 1230

New CLP Labelling

draft

1.06007.1000

31.12.10

11 | IMO: METHANOL  
ICAO: METHANOL

CH<sub>3</sub>OH  
1 l = 0,79 kg  
M = 32,04 g/mol

**Specification:**

Purity (GC)	≥ 99,9	%
Identity (IR) residue on	conforms	%
Evaporation	≤ 2,0	mg/l
Water	≤ 0,02	%
Colour	≤ 10	Hazen
Density (d 20 °C/20 °C)	0,791 - 0,793	g/cm <sup>3</sup>
Boiling point	64 - 65	°C
Acidity	≤ 0,0002	meq/g
Alkalinity	≤ 0,0002	meq/g
Gradient grade (at 235 nm)	≤ 2,0	mAU
Gradient grade (at 254 nm)	≤ 1,0	mAU
Fluorescence (ss quartz at 254 nm)	≤ 1,0	ppb
Fluorescence (ss quartz at 365 nm)	≤ 0,6	ppb
Transmission (at 220 nm)	≥ 55	%
Transmission (at 230 nm)	≥ 83	%
Transmission (from 260 nm)	≥ 98	%
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Danger, Highly flammable liquid and vapour. Toxic if inhaled, Toxic in contact with skin, Toxic if swallowed, Causes damage to organs, Keep away from heat/sparks/open flames/hot surfaces. - No smoking, Keep container tightly closed. Wear protective gloves/protective clothing/eye protection/face protection. IF exposed: Immediately call a POISON CENTER or doctor/physician.

Gefahr, Flüssigkeit und Dampf leicht entzündbar. Giftig bei Einatmen, Giftig bei Hautkontakt, Giftig bei Verschlucken, Schädlich für Organe, Von Hitze/Funken/offener Flamme/heißen Oberflächen fernhalten, Nicht rauchen, Behälter dicht verschlossen halten, Schutzhandschuhe/Schutzkleidung/Augenschutz/Gesichtsschutz tragen, Bei Exposition: Sofort GIFTINFORMATIONSZENTRUM oder Arzt anrufen.

Danger, Liquide et vapeurs très inflammables. Toxique par inhalation, Toxique par contact cutané, Toxique en cas d'ingestion, Risque avéré d'effets graves pour les organes, Tenir à l'écart de la chaleur/des étincelles/des flammes nues/des surfaces chaudes. - Ne pas fumer, Maintenir le récipient fermé de manière étanche, Porter des gants de protection/des vêtements de protection/un équipement de protection des yeux/du visage, EN CAS d'exposition: Appeler immédiatement un CENTRE ANTIPISON ou un médecin.

Peligro, Líquido e vapores muy inflamables. Tóxico si se inhala, Tóxico en contacto con la piel, Tóxico en caso de ingestión, Provoca daños en los órganos, Manténgase alejado de fuentes de calor, chispas, llama abierta o superficies calientes. - No fumar, Mantener el envase cerrado herméticamente, Llevar guantes, prendas, gafas o máscara de protección, EN CASO DE exposición: Llame inmediatamente a un CENTRO ANTIVENENO o a un médico.

Pericolo, Líquido e vapori facilmente infiammabili. Tossico per inalazione, Tossico in contatto con la pelle, Tossico in caso di ingestione, Provoca danni agli organi, Tenere lontano da fonti di calore/scintille/fiamme/superfici riscaldanti - Non fumare, Tenere il recipiente ben chiuso, Indossare guanti/indumenti protettivi/Proteggere gli occhi/Proteggere il viso, IN CASO DI ESPOSIZIONE: Contattare immediatamente un CENTRO ANTIVENENO o un medico.

Perigo, Líquido e vapor facilmente inflamáveis. Tóxico em contacto com a pele, Tóxico em caso de ingestão, Provoca danos em los órganos, Manter afastado de calor/fagulhas/chama aberta/superfícies quentes. - Não fumar, Manter o recipiente bem fechado, Usar luvas de proteção/vestuzário de proteção/proteção ocular/proteção facial, EM CASO DE exposição: Contacte imediatamente um CENTRO DE INFORMAÇÃO ANTIVENENOS ou um médico.

Gevaar, Licht ontvlambare vloeistof en damp, Giftig bij inademing, Giftig bij contact met de huid, Giftig bij inslikken, Veroorzaakt schade aan organen, Verreukst houden van warmte/vopen/open vuurmete openvlammen - niet roken, In goed gesloten verpakking bewaren, Beschermende handschoenen/beschermende kleding/cog-bescherming/gesichtsbescherming dragen, NA blootstelling: Onmiddellijk een vergiftigingencentrum of een arts raadplegen.

