

UN/SCEGHS/5/INF.17/Add.1

Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals
(Fifth session, 7-9 July 2003,
agenda item 2)

First Report of the Inter-sessional Working Group on Labelling

Comments by CEFIC

Herebelow are reproduced the comments (e-mail dated 23/04/2003 followed with proposals for amendments of section 1.4.10 of the GHS text, in visible mode) by CEFIC

A. E-mail text :

Dear Jennifer and all,

Further to Jennifer's note of the 14th April, as I have seen no response as yet, I thought that on behalf of Cefic I would submit the attached thought starter as a basis on which discussion could be initiated. This is only intended to address the first two issues denoted in Jennifer's e-mail.

The attached paper (in review mode) is section 1.4.10 of Part One of the GHS document, to which I have added some relevant text to try and address the issues involved (except for precedence of hazard pictograms). The text is taken in part from the UN Transport Model Regulations, and in part from the principles of the European Directives. The text in the attachment is purely for illustrative purposes and is not intended as a proposal for a finalised GHS text, but is simply a starting point to try and elaborate principles and to stimulate discussion aimed at resolving the issues. Consequently, in the attachment some of the text is in square brackets where actual figures requires elaboration, e.g. size of label, size of pictogram. The principles I am proposing are:

- 1 The minimum size of a GHS label is related to the size/capacity of the packagings
- 2 The minimum size of the pictogram on a GHS label is related to the minimum size of the GHS label
- 3 All the GHS label elements should be contained on the GHS label, except where the packaging concerned is subject to the UN Transport Model Regulations, in which case the relevant transport pictograms should not be within the GHS label, but should be adjacent to or in close proximity to the GHS label. This reflects the practice as it exists today under current legislative regimes.

The reason for proposing that the transport pictograms should be adjacent to, or in close proximity to the GHS label, rather than within the Globally Harmonised System label, is that in the implementation of the UN Transport Model Regulations for sea transport, the transport pictograms (transport labels) have to be capable of meeting a performance standard, 3 months immersion in sea water. This performance standard requires a relatively expensive material for printing on to, and the standard is probably neither relevant nor appropriate for workplace use. Therefore if there was a requirement for those transport pictograms to be within the GHS label, then the GHS label would then be de facto subject to the same performance standard. Printing of the transport pictograms on to the expensive feedstock is relatively straightforward and they are widely available off the shelf from suppliers for the relatively small total number of pictograms required. But if this were to be translated into a requirement for all GHS labels with an almost infinite number of variations of content, then the cost would be prohibitive and it would be impractical.

Paragraph 1.4.10.4.2.2 in the paper still retains the transport provisions that the transport pictograms shall be at least 100mm x 100mm, however for consistency in the overall GHS requirements this will probably

need to be modified in relation to application to the smaller packaging sizes. The transport pictograms would be differentiated from other GHS pictograms by not being within the Globally Harmonised System label area.

The EU labelling provisions require that “each symbol (pictogram) shall cover at least one-tenth of the surface area of the label but shall not be less than 1cm²”. This will need to be reconsidered as the current EU pictogram is a square set on its base, whereas the GHS pictograms are in the shape of a square set on a point (diamond shape). The label area required for the square set on a point compared to that of a square set on its base is exactly twice for the same surface area of square. Therefore if the EU principle were retained, A GHS label containing one pictogram each for physico-chemical, health and environmental hazards would require 60% of the total GHS label area, something which is clearly impractical.

Figures for actual label sizes plus the relation ship between the label size and pictogram sizes would need to be the subject of further discussion and agreement. Similarly other provisions on the labelling of very small packagings, or other special case labelling (e.g. gas cylinders, metals in massive form etc. – some possible examples are in square brackets in the attachment) would need to be elaborated.

<<GHS Labelling Provisions Draft Section 1-4-10 WGM.doc>>

Best Regards
Bill Machin /CEFIC

B. proposals for amendments of part 1.4.10 of the GHS text.

1.4.10 Labelling procedures

1.4.10.1 *Scope*

The following sections describe the procedures for preparing labels in the GHS, comprising the following:

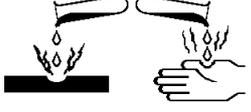
- (a) Allocation of label elements;
- (b) Reproduction of the symbol;
- (c) Reproduction of the hazard pictogram;
- (d) Signal words;
- (e) Hazard statements;
- (f) Precautionary statements and pictograms;
- (g) Product and supplier identification;
- (h) Multiple hazards and precedence of information;
- (i) Arrangements for presenting the GHS label elements;
- (j) Special labelling arrangements.

1.4.10.2 *Label elements*

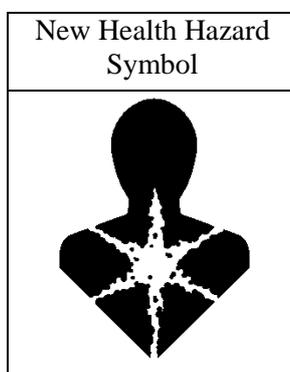
The tables in the individual Chapters for each hazard class detail the label elements (symbol, signal word, hazard statement) that have been assigned to each of the hazard categories of the GHS. Hazard categories reflect the harmonized classification criteria. A summary of the allocation of label elements is provided in Annex 1. There are special arrangements, which apply to the use of certain mixture concentrations in the GHS to take account of the information needs of different target audiences. These are further described in paragraph 1.4.10.5.4.

1.4.10.3 *Reproduction of the symbol*

The following hazard symbols are the standard symbols which should be used in the GHS. With the exception of the new [serious health hazard](#) symbol ~~which will be used for certain health hazards~~, the exclamation mark and the fish and tree, they are part of the standard symbol set used in the UN Recommendations on the Transport of Dangerous Goods, Model Regulations.

Flame	Flame over circle	Exploding bomb	Corrosion
			

Gas cylinder	Skull and crossbones	Exclamation Mark	Environment
			



1.4.10.4 *Pictograms and reproduction of the hazard pictograms*

1.4.10.4.1 A pictogram means a graphical composition that includes a symbol plus other graphic elements, such as a border, background pattern or colour that is intended to convey specific information.

1.4.10.4.2 *Shape, [size](#) and colour*

1.4.10.4.2.1 All hazard pictograms used in the GHS should be in the shape of a square set at a point.

1.4.10.4.2.2 For transport, the pictograms (*commonly referred to as labels in transport regulations*) prescribed by the UN Model Regulations on the Transport of Dangerous Goods should be used. The [specifications for the UN Model Regulations ~~prescribe transport pictograms are to be found in Annex 1 specifications including colour, symbols, size, background contrast, additional safety information \(e.g. hazard class\) and general format.~~](#) Transport pictograms are required to have minimum dimensions of 100

mm by 100 mm, with some exceptions for allowing smaller pictograms for very small packagings and for gas cylinders. ~~Other pictograms shall each cover at least [one-tenth] of the minimum surface area of a GHS label as specified in paragraph 1.4.10.5.4.1.4 but shall not be less than [1cm²].~~ ~~Transport pictograms include the symbol in the upper half of the label. The UN Model Regulations require that transport pictograms be printed or affixed to a packaging on a background of contrasting colour.~~ An example showing a typical label for a flammable liquid hazard according to the UN Model Regulations is provided below:

Pictogram for flammable liquid in
the UN Recommendations on the
Transport of Dangerous
Goods, Model Regulations



1.4.10.4.2.3 Pictograms prescribed by the GHS but not the UN Recommendations on the Transport of Dangerous Goods, Model Regulations, should have a black symbol on a white background with a red frame sufficiently wide to be clearly visible. However, when such a pictogram appears on a label for a package which will not be exported, the Competent Authority may choose to give suppliers and employers discretion to use a black border. In addition, Competent Authorities may allow the use of UN Recommendations on the Transport of Dangerous Goods, Model Regulations pictograms in other use settings where the package is not covered by the Model Regulations. An example of a GHS pictogram used for a skin irritant is provided below.

GHS pictogram for skin irritant



1.4.10.5 *Allocation of label elements*

1.4.10.5.1 *Information required for packages covered by the UN Model Regulations on the Transport of Dangerous Good*

Where a UN Model Regulations on the Transport of Dangerous Goods pictogram appears on a label, a GHS pictogram for the same hazard should not appear. ~~The GHS pictograms not required for the Transport of Dangerous Goods should not be displayed on freight containers, road vehicles or railway wagons/tanks.~~

1.4.10.5.2 *Information required on a GHS label*

(a) Signal words³

A signal word means a word used to indicate the relative level of severity of hazard and alert the reader to a potential hazard on the label. The signal words used in the GHS are “Danger” and “Warning”. “Danger” is used for the more severe hazard categories (i.e. in the main for hazard categories 1 and 2), while “Warning” is used for the less severe. The tables in the individual Chapters for each hazard class detail the signal words that have been assigned to each of the hazard categories of the GHS.

(b) Hazard statements³

A hazard statement means a phrase 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 tables of label elements in the individual Chapters for each hazard class detail the hazard statements that have been assigned to each of the hazard categories of the GHS.

(c) Precautionary statements and pictograms³

A precautionary statement means a phrase (and/or pictogram) that describes recommended measures that should be taken to minimise or prevent adverse effects resulting from exposure to a hazardous product, or improper storage or handling of a hazardous product. The GHS label should include appropriate precautionary information, the choice of which is with the labeller or the competent authority. Annex 3 contains examples of precautionary statements, which can be used, and also examples of precautionary pictograms, which can be used where allowed by the Competent Authority.

(d) Product identifier

(i) A product identifier should be used on a GHS label and it should match the product identifier used on the SDS. Where a substance or mixture is covered by the UN Model Regulations on the Transport of Dangerous Goods, the UN proper shipping name should also be used on the package;

(ii) The label for a substance should include the chemical identity of the substance. For mixtures or alloys, the label should include the chemical identities of all ingredients or alloying elements that contribute to acute toxicity, skin corrosion or serious eye damage, germ cell mutagenicity, carcinogenicity, reproductive toxicity, skin or respiratory sensitisation, or Target Organ Systemic Toxicity (TOST), when these hazards appear on the label. Alternatively, the Competent Authority may require the inclusion of all ingredients or alloying elements that contribute to the hazard of the mixture or alloy;

(iii) Where a substance or mixture is supplied exclusively for workplace use, the competent authority may choose to give suppliers discretion to include chemical identities on the SDS, in lieu of including them on labels;

(iv) The competent authority rules for CBI take priority over the rules for product identification. This means that where an ingredient would normally be included on the label, if it meets the competent authority criteria for CBI, its identity does not have to be included on the label.

³ Paragraphs 1.4.10.5.2 (a) and (b), and also part of the text of paragraph 1.4.10.5.2 (c) are not part of the agreed text on hazard communication developed by the ILO Working Group on Hazard Communication, but have been provided here as additional information on signal words, hazard statements and precautionary statements.

(e) Supplier identification

The name, address and telephone number of the manufacturer or supplier of the substance or mixture should be provided on the label.

1.4.10.5.3 *Multiple hazards and precedence of hazard information*

The following arrangements apply where a substance or mixture presents more than one GHS hazard. It is without prejudice to the building block principle described in the *Purpose, Scope and Application* (Chapter 1.1). Therefore where a system does not provide information on the label for a particular hazard, the application of the arrangements should be modified accordingly.

1.4.10.5.3.1 Precedence for the allocation of symbols

For substances and mixtures covered by the UN Recommendations on the Transport of Dangerous Goods, Model Regulations, the precedence of symbols for physical hazards should follow the rules of the UN Model Regulations. In workplace situations, the Competent Authority may require all symbols for physical hazards to be used. For health hazards the following principles of precedence apply:

- (a) if the skull and crossbones applies, the exclamation mark should not appear;
- (b) if the corrosive symbol applies, the exclamation mark should not appear where it is used for skin or eye irritation;
- (c) if the new health hazard symbol appears for respiratory sensitisation, the exclamation mark should not appear where it is used for skin sensitisation or for skin or eye irritation.

1.4.10.5.3.2 Precedence for allocation of signal words

If the signal word 'Danger' applies, the signal word 'Warning' should not appear.

1.4.10.5.3.3 Precedence for allocation of hazard statements

All assigned hazard statements should appear on the label. The Competent Authority may choose to specify the order in which they appear.

1.4.10.5.4 *Arrangements for presenting the GHS label elements*

1.4.10.5.4.1 Location of GHS information on the label

The GHS hazard pictograms, signal word and hazard statements should be located together on the label. The Competent Authority may choose to provide a specified layout for the presentation of these and for the presentation of precautionary information, or allow supplier discretion. Specific guidance and examples are provided in the Chapters on individual hazard classes.

Examples of ~~There have been some concerns about~~ how the label elements ~~may should~~ appear on different packagings. ~~Specific examples~~ are provided in Annex 6.

1.4.10.5.4.1.1 GHS pictograms not required for the Transport of Dangerous Goods should not be displayed on freight containers, road vehicles or railway wagons/tanks.

1.4.10.5.4.1.2 For packagings where both the UN Recommendations on the Transport of Dangerous Goods, Model Regulations and regulations governing other use settings are applicable, except for the pictograms required by the UN Recommendations on the Transport of Dangerous Goods, Model Regulations, all label elements shall be contained on a GHS label. Pictograms required by the UN

Recommendations on the Transport of Dangerous Goods, Model Regulations shall be placed adjacent to or in close proximity to the label.

1.4.10.5.4.1.3 Where the UN Recommendations on the Transport of Dangerous Goods, Model Regulations are not applicable, but regulations governing other use settings are applicable, all label elements shall be contained on a GHS label.

Dimensions of the label

1.4.10.5.4.1.4

(a) [The dimensions of the label shall be as follows:

<u>Capacity of the package</u>	<u>Dimensions (in millimetres)</u>
<u>- not exceeding 3 litres:</u>	<u>if possible, at least 52 x 74</u>
<u>- greater than 3 litres but not exceeding 50 litres:</u>	<u>at least 74 x 105</u>
<u>- greater than 50 litres but not exceeding 500 litres:</u>	<u>at least 105 x 148</u>
<u>- greater than 500 litres:</u>	<u>at least 148 x 210]</u>

(b) A label shall not be required when the particulars, as specified in paragraph 1.4.10.1 are clearly shown on the package itself. In such cases, where appropriate, any requirements applicable to a label shall be equally applicable to the information shown on the package.

1.4.10.5.4.1.5

(a) The label,

- (i) shall be firmly affixed to one or more surfaces of the packaging immediately containing the substance or mixture;
- (ii) shall be able to be read horizontally when the package is set down normally;
- (iii) colour and presentation shall be such that the hazard pictogram and its background stand out clearly from it.

(b) The information, as specified in paragraph 1.4.10.1, required on the label:

- (i) shall be clearly and indelibly marked.
- (ii) shall stand out clearly from its background.
- (iii) shall be of such size and spacing as to be easily read.

1.4.10.5.4.2 Supplemental information

The competent authority has the discretion to allow the use of supplemental information subject to the parameters outlined in 1.4.6.3. The competent authority may choose to specify where this information should appear on the label or allow supplier discretion. In either approach, the placement of supplemental information should not impede identification of GHS information.

1.4.10.5.4.3 Use of colour outside pictograms

In addition to its use in pictograms, colour can be used on other areas of the label to implement special labelling requirements such as the use of the pesticide bands in the FAO Labelling Guide, for signal words and hazard statements or as background to them, or as otherwise provided for by the competent authority.

1.4.10.5.5 *Special labelling arrangements*

The competent authority may ~~ehese~~ choose to allow communication of certain hazard information for carcinogens, reproductive toxicity and target organ systemic toxicity repeat exposure on the label and on the SDS, or through the SDS alone (see specific chapters for details of relevant cut-offs for these classes).

Similarly, for metals and alloys, the competent authority may chose to allow communication of the hazard information through the SDS alone when they are supplied in the massive, non-dispersible, form.

Mobile gas cylinders

1.4.10.5.5.1 For mobile gas cylinders the requirements concerning labelling are considered to be satisfied when they are in agreement with the provisions of the GHS.

However, by way of derogation, one of the following alternatives can be used for gas cylinders with a water capacity of less than or equal to 150 litres:

- (a) the format and dimensions of the label shall follow the prescriptions of the current edition of ISO Standard ISO/DP 7225 relating to 'Gas cylinders - Precautionary labels'. In this case, the label can bear the generic name or industrial/commercial name of the substance or mixture provided that the hazardous component substances of a mixture are shown on the body of the gas cylinder in a clear and indelible way.
- (b) the information specified in paragraph 1.4.10.1 may be provided on a durable information disc or label held captive on the cylinder.

Gas containers intended for propane, butane or liquefied petroleum gas (LPG)

1.4.10.5.5.2 These substances, propane, butane and liquefied petroleum gas or mixtures containing these substances are classified in accordance with the criteria of the GHS. They do not present a hazard to human health when they are placed on the market in closed refillable cylinders or in non-refillable cartridges within the scope of EN 417 as fuel gases which are only released for combustion (current edition of EN 417, relating to 'Non-refillable metallic gas cartridges for liquefied petroleum gases, with or without a valve, for use with portable appliances; construction, inspection, testing and marking').

1.4.10.5.5.3 These cylinders or cartridges must be labelled with the appropriate pictogram and the hazard and precautionary statements concerning flammability. No information concerning the effects on human health is required on the label. However, the information concerning effects on human health which should have appeared on the label shall be transmitted to the professional user by the person responsible for placing

the substance or mixture on the market in a Safety Data Sheet. For the consumer, sufficient information shall be transmitted to enable them to take all necessary measures for health and safety.

Metals in massive form, alloys, mixtures containing polymers, mixtures containing elastomers

1.4.10.5.5.4 These substances or mixtures shall be classified in accordance with the criteria of the GHS and labelled in accordance with the provisions of the GHS. However, some of these substances or mixtures, although classified in accordance with the criteria of the GHS, do not present a hazard to human health by inhalation, ingestion or contact with skin or to the aquatic environment in the form in which they are placed on the market. Such substances or mixtures do not require a label according to these provisions. However, all the information which should have appeared on the label shall be transmitted to the user by the person responsible for placing the metal on the market, in a Safety Data Sheet.]

1.4.10.5.5.5 Workplace labelling⁴

Products falling within the scope of the GHS will carry the GHS label at the point where they are supplied to the workplace, and that label should be maintained on the supplied container in the workplace. The GHS label or label elements should also be used for workplace containers. However, the competent authority can allow employers to use alternative means of giving workers the same information in a different written or displayed format when such a format is more appropriate to the workplace and communicates the information as effectively as the GHS label. For example, label information could be displayed in the work area, rather than on the individual containers.

Alternative means of providing workers with the information contained in GHS labels are needed usually where hazardous chemicals are transferred from an original supplier container into a workplace container or system, or where chemicals are produced in a workplace but are not packaged in containers intended for sale or supply. Chemicals that are produced in a workplace may be contained or stored in many different ways such as: small samples collected for testing or analysis, piping systems including valves, process or reaction vessels, ore cars, conveyer systems or free-standing bulk storage of solids. In batch manufacturing processes, one mixing vessel may be used to contain a number of different chemical mixtures.

In many situations, it is impractical to produce a complete GHS label and attach it to the container, due, for example, to container size limitations or lack of access to a process container. Some examples of workplace situations where chemicals may be transferred from supplier containers include: containers for laboratory testing or analysis, storage vessels, piping or process reaction systems or temporary containers where the chemical will be used by one worker within a short timeframe. Decanted chemicals intended for immediate use could be labelled with the main components and directly refer the user to the supplier label information and SDS.

All such systems should ensure that there is clear hazard communication. Workers should be trained to understand the specific communication methods used in a workplace. Examples of alternative methods include: use of product identifiers together with GHS symbols and other pictograms to describe precautionary measures; use of process flow charts for complex systems to identify chemicals contained in pipes and vessels with links to the appropriate SDS; use of displays with GHS symbols, colour and signal words in piping systems and processing equipment; use of permanent placarding for fixed piping; use of batch tickets or recipes for labelling batch mixing vessels and use of piping bands with hazard symbols and product identifiers.

1.4.10.5.5.6 Consumer product labelling based on the likelihood of injury

⁴ Paragraphs under 1.4.10.5.5.1 are not part of the agreed text on hazard communication developed by the ILO Working Group on Hazard Communication, but have been provided here as additional guidance on the issue of workplace labelling.

All systems should use the GHS classification criteria based on hazard, however competent authorities may authorize consumer labelling systems providing information based on the likelihood of harm (risk based labelling). In the latter case the Competent Authority would establish procedures for determining the potential exposure and risk for the use of the product. Labels based on this approach provide targeted information on identified risks but may not include certain information on chronic health effects (e.g. (Target Organ Systemic Toxicity (TOST)) following repeated exposure, reproductive toxicity and carcinogenicity), that would appear on a label based on hazard alone. A general explanation of the broad principles of risk-based labelling is contained in Annex 4.

1.4.10.5.5.7 Tactile warnings

If tactile warnings are used, the technical specifications should conform with EN ISO standard 11683 (1997 edition) relating to tactile warnings of danger.

