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**COMMITTEE OF EXPERTS ON THE TRANSPORT OF  
DANGEROUS GOODS AND ON THE GLOBALLY  
HARMONIZED SYSTEM OF CLASSIFICATION  
AND LABELLING OF CHEMICALS**

Sub-Committee of Experts on the  
Transport of Dangerous Goods

Twenty-sixth session,  
29 November-3 December 2004  
Item 6 of the provisional agenda

Sub-Committee of Experts on the Globally  
Harmonized System of Classification and Labelling  
of Chemicals

Eighth session, 6-9 December 2004  
Item 6 of the provisional agenda

PROGRAMME OF WORK FOR THE BIENNIUM 2005-2006

Systematic approach for colours and appearance of pictograms (placards)  
according to the GHS classification

Transmitted by the International Technical Committee for the prevention and Extinction of Fire (CTIF)

**Background**

In recent years CTIF has actively participated in the ILO working group which has formulated the basic GHS hazard communication document.

During that discussion CTIF has suggested that

1. The harmonised system of hazard communication should be based on pictograms containing:
  - Symbols in combination with colours and colour patterns identifying the hazard
  - Symbols or coloured patterns, identifying the physical state
  - a graphical scale identifying the level of hazard
  - coded information for other specific intrinsic properties
2. Preference should be given to the diamond shaped symbol, as in transport, to show physical hazards and acute health and environmental hazards. Symbols and colours and colour patterns used in this already harmonised system should be used to greatest possible extent.

3. In order to convey the necessary information in a worldwide context, the harmonised system should endeavour to replace phrases and letters by pictograms, using symbols, colour codes, coded background patterns and other coded information (e.g. numbers). These coded elements should be as few as possible and as simple as possible to ease the training processes required by this type of information.
4. Pictograms, rather than coded information (such as the transport number system) should be used to target audiences other than emergency responders. If a numbering system is necessary preference should be given to a numbering system which can be easily decoded, e.g. 2 TOC for gas, toxic, oxidising, corrosive.
5. Consideration should be given as to whether the hazard presented by deeply refrigerated, liquefied non-flammable gases should be dealt with as an endpoint. Currently this is neither shown under physical nor health hazards.

A symbol for these substances could be



6. Information about the hazard level is only required on pictograms for flammable liquids and substances, which in contact with water emit flammable gases because the different hazard levels require different initial response actions. Wrong initial measures would result in greater risk for the responders and/or the public as well as the environment by the use of inappropriate extinguishing media.
7. In order to identify the level of hazard on the pictogram special warning phrases should not be used due to language problems. Preference is given to a graphical scale representing the hazard levels by taking into account the principle that increasing severity of the hazard is presented by an increasing number of symbols/shapes (similar to the bar system used in radioactive trefoils). This would prove to be easier to read from a distance by responders and would allow trained people to better understand the information despite language and culture barriers. As any type of coded information, such a system would require some training, which could easily be introduced to the basic training for responders.

### **Current status**

The latest successful proposal from Norway to introduce a new placard for Organic peroxides highlighted that

- pictograms are the most important means of hazard communication to emergency responders because they can always be found on transport units at incident sites
- visibility from a distance is a very important issue.

In its support for the Norwegian proposal CTIF pointed out that there are still some pictograms which should be considered for further improvement. Amongst the areas for consideration are:

- The similar pictograms (placards) for flammable liquids and flammable gases
- White symbol e.g. flame, on a dark background is much more visible from a distance than a black one (some colours such as red are difficult to see in low light conditions)
- The physical state of a released product has a great impact on the emergency measures to be taken (this information is not currently shown via a pictogram [placard]).

## **Proposal**

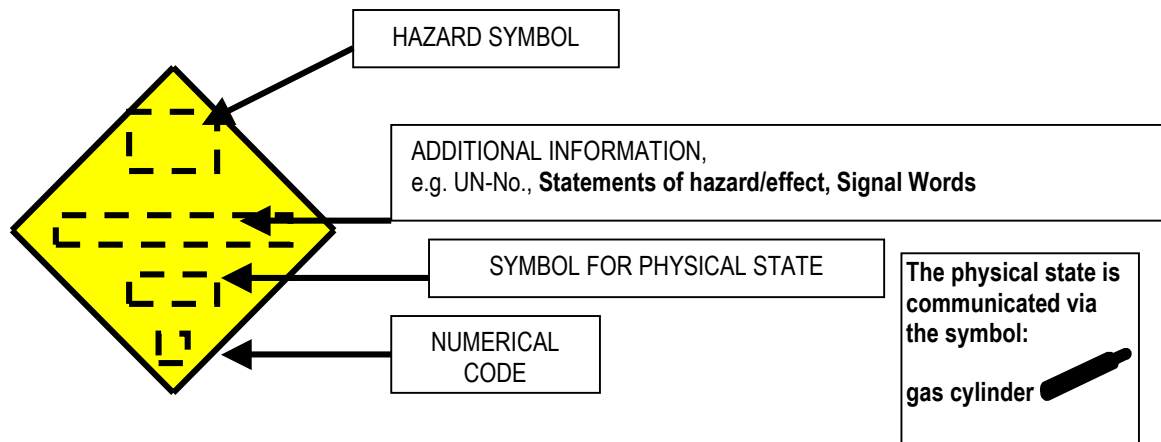
CTIF proposes that:

1. The TDG and GHS sub-committees include a review of the 'Provisions for labels' set out paragraph 5.2.2.2 of the Model Regulations within it's work programmes for the 2005/06 biennium. The aim of the review would be to develop a systematic approach for colours and appearance of pictograms (placards), according to the GHS classification, in order to better meet the needs of target audiences.  
[ A thought starter is presented in the annex.]
2. Should the Sub-Committees agree to this work, CTIF propose that a working group be established to carry out this review. CTIF would be prepared to host the working group.

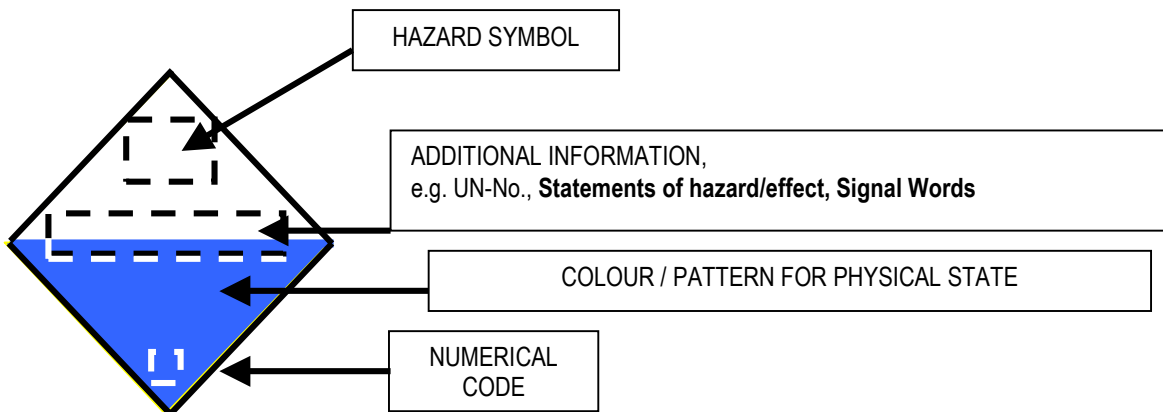
**Annex**

**COMPONENTS OF PICTOGRAMS**

**GASES:**














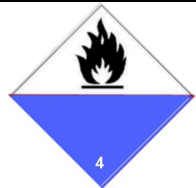



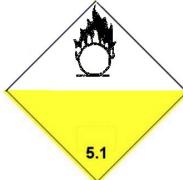



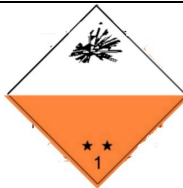



**SOLIDS and LIQUIDS:**






















<b>The physical state is communicated via the coloured pattern of the pictogram</b>				
<i>Liquid</i>	<i>Example</i>		<i>Solid</i>	<i>Example</i>
Coloured full pattern			Coloured half pattern	




*A proposal for a system according to the above mentioned principles is presented hereafter*

PHYSICAL HAZARD	SYMBOL for physical hazard	ENDPOINT	PICTOGRAM		
			GAS	LIQUID	SOLID
<b>FLAMMABILITY</b>	<i>Flame</i>				
		FLAMMABLE GASES			
		FLAMMABLE LIQUIDS			
		FLAMMABLE SOLIDS			
		SELF-REACTIVE SUBSTANCES			
		PYROPHORIC LIQUIDS			
		PYROPHORIC SOLIDS			
		SELF-HEATING SUBSTANCES			

		SUBSTANCES which in contact with water emit flammable gases			
PHYSICAL HAZARD	SYMBOL for physical hazard	ENDPOINT	PICTOGRAM		
			GAS	LIQUID	SOLID
OXIDIZING	<i>Flame over circle</i>				
		OXIDIZING GASES			
		OXIDIZING LIQUIDS			
		OXIDIZING SOLIDS			
		ORGANIC PEROXIDES			
EXPLOSION	<i>Exploding bomb</i>	EXPLOSIVES			
CORROSIVITY	<i>Drops from tubes on hand and plate</i>	METAL CORROSIVES			

PHYSICAL HAZARD	SYMBOL for physical hazard	ENDPOINT	PICTOGRAM		
			GAS	LIQUID	SOLID
	Gas cylinder	GASES UNDER PRESSURE			
	Ice crystal	REFRIGERATED GASES			
	Thermometer 	ELEVATED TEMPERATURE			

HEALTH HAZARD	SYMBOL for health hazard	ENDPOINT	PICTOGRAM		
			GAS	LIQUID	SOLID
ACUTE TOXICITY 	Skull with crossed bones	ACUTE TOXICITY Oral, dermal			
		ACUTE TOXICITY Inhalation			
CORROSIVITY	<i>Drops from tubes on hand and plate</i> 	Skin Irritation /Corrosion			
OTHER TOXIC EFFECTS	<i>4 overlapping rings</i> 	Infectious			

ENVIRON- MENTAL HAZARD	SYMBOL for environmental hazard	ENDPOINT	PICTOGRAM		
			GAS	LIQUID	SOLID
ENVIRONMEN- TAL EFECTS	<i>Tree and fish</i> 	AQUATIC TOXICITY			

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