
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 Globally Harmonized System of Classification and Labelling of Chemicals

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Hazard communication issues

Codification of GHS hazard classes and categories

Transmitted by the expert from Australia

Introduction

1. This informal document provides a proposal for the codification of the GHS hazard classes and categories, following discussion of the issue at the previous GHS meeting. The purpose of this document is to promote further discussion of the issue in order to arrive at an appropriate coding system for the GHS hazard classes and categories.

Discussion

2. In our proposal, each hazard class and category is given a unique alpha-numeric code consisting of one letter followed by two numbers.

3. The GHS hazard classes have been grouped based on a broadly common hazard property. The rationale for the groupings is set out in the first column of the table in the Annex to this document. Each grouping has been assigned a unique letter. For example – classes relating to flammability are assigned the letter “B”. The rationale does not form part of the coding system but has been included to show why the classes have been grouped as they have.

4. Each GHS hazard class is identified by the letter of the grouping to which it belongs and a single number. For example – flammable aerosols are assigned the alpha-numeric code of “B2”, the “B” for the flammable grouping and the “2” for the class within the group.

5. Each category within a class is then assigned a number in ascending order, based on the category hierarchy set out in the GHS document. For example: “J33” is category 3 in the class of acute toxicity: inhalation (“J3”). Note that the numeric used for “Unstable explosives” is “0”, to maintain a logical order of the explosives.

6. The proposal takes account of some issues that were raised in previous discussions on codification –

- (a) The code is unique to the GHS and is not based on or derived from dangerous goods coding, and is sufficiently different to ensure there can be no confusion between the two sets of codes.
- (b) There is significant capacity in the design of the coding system to expand the coding to add new classes and categories and to add new categories to existing classes in each of the physical, health and environmental hazard section. For example, if a new class for terrestrial toxicity is established it could be added using the letter “U”.

- (c) The letters “R” and “S” have not been used in this proposal to ensure there will be no confusion with the codes for Risk and Safety phrases used in the current EU hazard classification system (and adopted by some other countries). Once the GHS is well established and the other systems are no longer in operation, these letters could eventually be used if new health hazard classes are established.

7. In developing the proposal, a number of options were considered and discarded. A coding system using four digits was considered, but the numbers were very similar to UN numbers which could lead to confusion. Various systems incorporating or expanding the current dangerous goods coding were also considered. However, as the criteria for a number of GHS classes and categories diverge from, or are additional to, dangerous goods criteria, use of any such system to derive one set of classifications from the other would potentially lead to erroneous conclusions being made.

Recommendation

8. It is recommended that the hazard coding system described in this paper be discussed with the view to developing a system for adoption by the next meeting of the UNSCEGHS in July 2006.

AnnexCODIFIED HAZARD CLASSES AND CATEGORIES

PHYSICAL HAZARDS

Rationale	Class	Category	Code	
Explosive	Explosives	Unstable explosives	A10	
		Division 1.1	A11	
		Division 1.2	A12	
		Division 1.3	A13	
		Division 1.4	A14	
		Division 1.5	A15	
		Division 1.6	A16	
Flammable	Flammable gases	Category 1	B11	
		Category 2	B12	
	Flammable aerosols	Category 1	B21	
		Category 2	B22	
	Flammable liquids	Category 1	B31	
		Category 2	B32	
		Category 3	B33	
		Category 4	B34	
	Flammable solids	Category 1	B41	
		Category 2	B42	
	Oxidizing	Oxidizing gases	Category 1	C11
		Oxidizing liquids	Category 1	C21
Category 2			C22	
Category 3			C23	
Oxidizing solids		Category 1	C31	
		Category 2	C32	
		Category 3	C33	
Organic peroxides		Type A	C41	
		Type B	C42	
		Type C & D	C43	
		Type E & F	C44	
		Type G	C45	
Corrosive to metals		Category 1	C51	
Reactive		Self-reactive substances and mixtures	Type A	D11
			Type B	D12
	Type C & D		D13	
	Type E & F		D14	
	Type G		D15	
	Self-heating substances and mixtures	Category 1	D21	
		Category 2	D22	
	Pyrophoric liquids	Category 1	D31	
	Pyrophoric solids	Category 1	D32	

Rationale	Class	Category	Code
Reactive (Cont'd)	Substances and mixtures, which in contact with water, emit flammable gases	Category 1	D41
		Category 2	D42
		Category 3	D43
Pressure	Gases under pressure	Compressed gases	E11
		Liquefied gas	E21
		Refrigerated liquefied gas	E31
		Dissolved gas	E41

HEALTH HAZARDS

Rationale	Class	Category	Code
Acute toxicity	Acute toxicity: Oral	Category 1	J11
		Category 2	J12
		Category 3	J13
		Category 4	J14
		Category 5	J15
	Acute toxicity: Skin	Category 1	J21
		Category 2	J22
		Category 3	J23
		Category 4	J24
		Category 5	J25
	Acute toxicity: Inhalation	Category 1	J31
		Category 2	J32
		Category 3	J33
		Category 4	J34
		Category 5	J35
	Aspiration hazard	Category 1	J41
		Category 2	J42
	Specific Target Organ Systemic Toxicity (Single Exposure)	Category 1	J51
		Category 2	J52
		Category 3	J53
Corrosive	Skin corrosion/irritation	Category 1A	K11
		Category 1B	K12
		Category 1C	K13
		Category 2	K14
		Category 3	K15
	Serious eye damage/eye irritation	Category 1	K21
		Category 2A	K22
		Category 2B	K23
Sensitization	Respiratory sensitization	Category 1	L11
	Skin sensitization	Category 1	L21

<i>Rationale</i>	Class	Category	Code
<i>Chronic toxicity</i>	Germ cell mutagenicity	Category 1	M11
		Category 2	M12
		Category 3	M13
	Carcinogenicity	Category 1	M21
		Category 2	M22
		Category 3	M23
	Toxic to reproduction	Category 1A	M31
		Category 1B	M32
		Category 2	M33
		Effects on lactation	M34
	Specific Target Organ Systemic Toxicity (Repeated exposure)	Category 1	M41
		Category 2	M42

ENVIRONMENTAL HAZARDS

<i>Rationale</i>	Class	Category	Code
<i>Aquatic toxicity</i>	Aquatic toxicity (Acute)	Category 1	T11
		Category 2	T12
		Category 3	T13
	Aquatic toxicity (Chronic)	Category 1	T21
		Category 2	T22
		Category 3	T23
		Category 4	T24