



Secretariat

Distr.
GENERAL

ST/SG/AC.10/C.3/2004/68
21 April 2004

ORIGINAL: ENGLISH

**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-fifth session, 5-14 July 2004
Item 12 (a) of the provisional agenda

**HARMONIZATION WITH THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION
AND LABELLING OF CHEMICALS (GHS)**

Hazards to the aquatic environment

Transmitted by the expert from the Netherlands

Introduction

In December 2003, the Sub-Committee discussed a document from the Netherlands concerning the classification of substances hazardous to the aquatic environment (ST/SG/AC.10/C.3/2003/58). After careful discussion of this paper the Sub-committee decided "that all substances hazardous to the aquatic environment, either falling under classes 1 to 8 or under class 9 only, should be identified as such by a GHS label or mark under transport regulations". The expert from the Netherlands was invited to revise the proposal in the light of certain comments made, **and** to provide the Sub-Committee with a closed or indicative list of substances already identified as meeting the GHS criteria for hazards to the aquatic environment. (ST/SG/AC.10/C.3/48, paras. 68-72).

1. REVISED PROPOSAL

The proposal, revised on the basis of comments made during the last Sub-Committee session is presented in Annex 1 to this document.

Naming

The Sub-Committee discussed the name of the group of substances which are hazardous to the aquatic environment. There are several possibilities:

- Substances hazardous to the aquatic environment (as used in the GHS): name is in line with the GHS, distinction with substances which are for example ozone-depleting is possible;
- Environmentally hazardous substances (as used in the Model Regulations) name is presently used in the Model Regulations, but may have to be amended in the future (see above);
- Aquatic Pollutants (as proposed by the Netherlands as “shorthand”) name appeared to be linguistically incorrect;
- Other term.

The Sub-committee is invited to decide on the name. In annex 1 to this document, the full GHS name has been used (in square brackets) in order to facilitate the decision of the Sub-Committee.

2. LIST OF SUBSTANCES HAZARDOUS TO THE AQUATIC ENVIRONMENT

Extensive work has been done by both transport and supply and use official bodies in listing environmentally hazardous substances. In preparing this document the Netherlands have decided that it will be more cost efficient as well as time efficient to refer to the work already done rather than making yet another list.

There are several bodies where intensive work has been done in listing these chemicals, for example:

- EU (the N-class)
- IMO (the IMDG code)
- IMO Revised Gesamp Hazard Profiles list (Marpol Annex II, Bulk liquids)

In deciding which of these “lists” is most suitable for the identification, the criteria of these 3 lists are compared to the GHS criteria (the summary of this can be found in annex 2 to this document).

In comparing the GHS criteria with the other bodies it becomes clear that the EU N-class is most in line with the GHS criteria. There are however two differences

- The cut off values biodegradability is BCF <500 in the GHS (Rapidly degradable) and BCF <100 in the N-class (Readily degradable)
- The cut off values for bioaccumulation is Log Kow >= 4 in the GHS and Log Pow >= 3 in the N-class

However, the exact figures for both the BCF and the Log Pow data are indicated in the afore mentioned list so that these differences between the N-class and GHS can be checked per substance. Therefore the Netherlands are of the opinion that the EU N-class can be considered a suitable indicative list. Because adding the entire list of N-class substances to this document would make this a unnecessarily bulky document, the delegations are invited to visit the Swedish internet site <http://www.kemi.se/nclass>, which contains a regularly updated list. An example of the information to be found on this internet site is included in Annex 3 of this document.

Annex 1

PROPOSED AMANDEMENTS TO THE UN MODEL RECOMMENDATIONS

Part 1 General provisions, definitions, training and security

No amendments

Part 2 Classification

I Add new paragraph to sub section 2.0.0 and renumber accordingly as follows:

2.0.0 Responsibilities

2.0.0.1 Except for [Substances hazardous to the aquatic environment] , the classification shall be made by the appropriate competent authority when so required, or may otherwise be made by the consignor.

2.0.0.2 The consignor shall identify substances or mixtures transported which are [Substances hazardous to the aquatic environment] according to the criteria of chapter 2.10.

II Subdivide paragraph 2.0.1.2 into two paragraphs and delete the words “without additional labelling” and replace the words “environmentally hazardous” with “[Substances hazardous to the aquatic environment]” as follows:

2.0.1.2. Many of the substances assigned to classes 1 to 9 may also fall within the criteria for [Substances hazardous to the aquatic environment] (see chapter 2.10).

2.0.1.2.1. Wastes shall be transported under the requirements of the appropriate class considering their hazards and the criteria in these Regulations.

Wastes not otherwise subject to these Regulations but covered under the Basel Convention¹ may be transported under Class 9.

III Amend paragraph 2.0.1.4 to read:

2.0.1.4 Dangerous goods are determined to present one or more of the dangers represented by classes 1 to 9 and divisions, [Substances hazardous to the aquatic environment] and, if applicable, the degree of danger (packing group) on the basis of the provisions in chapters 2.1 to 2.10.

IV Amend 2.9.2.1 a) to read:

a) environmentally hazardous substances (see chapter 2.10) which are not covered by other classes;

V 2.9.3 is moved to new chapter 2.10 and renumbered accordingly, see 2.10 below.

VI Include a new Chapter 2.10 as follows:

¹ *Basel convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal.*

Chapter 2.10

Substances hazardous to the aquatic environment

VII Include the text of subsection 2.9.3 and renumber as indicated below:

2.9.3.1 to be renumbered 2.10.1

2.9.3.1.1 to be renumbered 2.10.1.1 and amended as follows:

2.10.1.1 *[Substances hazardous to the aquatic environment] are liquid or solid substances pollutant to the aquatic environment and solutions and mixtures of such substances as defined in 2.10.4 (including preparations and wastes)*

2.9.3.1.2 to be renumbered 2.10.1.2

2.9.3.1.3 to be renumbered 2.10.1.3

2.9.3.1.4 to be renumbered 2.10.1.4

VIII Include the text of subsections 2.9.3.2 to 2.9.3.4 as new subsections 2.10.2 to 2.10.4

IX The existing text of 2.9.3.5 is amended and renumbered as follows:

2.10.5 Properties

[Substances hazardous to the aquatic environment] shall be transported under the appropriate entry according to their properties if they fall within the criteria of any of the classes 1 to 8. If they do not fall within the criteria of any of these classes, they shall be transported under the entry:

UN 3077 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S., or

UN 3082 ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.,

as appropriate, unless there is a specific entry in class 9.

Part 3 Dangerous goods list and limited quantities exemptions

X Add new 3.1.2.8.1.3 and renumber existing 3.1.2.8.1.3 accordingly:

3.1.2.8.1.3 If the proper shipping name for a [substance hazardous to the aquatic environment] does not identify by name the component or components which make it a [substance hazardous to the aquatic environment], the proper shipping name shall be supplemented with the name of the component most predominantly contributing to this hazard designation in square brackets

XI Add new chapter 3.1.4**3.1.4 [Substances hazardous to the aquatic environment]**

NOTE: [Substances hazardous to the aquatic environment] are not identified as such in the Dangerous Goods List, the identification of [Substances hazardous to the aquatic environment] shall be done by the consignor (2.0.0.2)

Part 4 Packing and tank provisions

No amendments

Part 5 Consignment Procedures**XII** Add new 5.2.1.7 as follows:**5.2.1.7 Special marking provisions for[substances hazardous to the aquatic environment]**

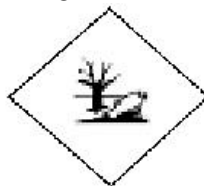
5.2.1.7.1 Packages containing [substances hazardous to the aquatic environment] shall be durably marked with the [substance hazardous to the aquatic environment] mark. The [substance hazardous to the aquatic environment] mark is not required when single packages or inner packagings of combination packages contain less than 5 l for liquids or 5 kg for solids.

5.2.1.7.2 The [substance hazardous to the aquatic environment] marking shall be located adjacent to any other dangerous goods hazard communication marking required in these Model Regulations. The requirements of 5.2.1.2 shall be met. Packages, including IBCs shall be marked on at least two opposing sides.

5.2.1.7.3 Specifications for the [substance hazardous to the aquatic environment] mark

5.2.1.7.3.1 The [substance hazardous to the aquatic environment] marking shall be as shown in Figure 5.2.2. For packagings with a capacity of not more than 4000 litres, the dimensions shall be 100 mm by 100 mm. For other packagings and transport units (see 5.3.2.3.1) the minimum dimensions shall be 250 mm by 250 mm.

Figure 5.2.2



Symbol (fish and tree): black on white or suitable contrasting background

XIII Add the words “or the [Substance hazardous to the aquatic environment] mark” to 5.3.2.1.2.(b) as follows:

(b) on an orange rectangular panel not less than 120 mm high and 300 mm wide, with a 10 mm black border, to be placed immediately adjacent to each placard *or the [substance hazardous to the aquatic environment] mark* (see Figure 5.3.3).

XIV Add new 5.3.2.3 as follows:

5.3.2.3 [Substance hazardous to the aquatic environment] mark

5.3.2.3.1 A transport unit which contains packages marked in accordance with 5.2.1.7 shall itself be marked on each side and each end with the [substance hazardous to the aquatic environment] marking (fig. 5.2.2).

XV Add the following sentence to 5.4.1.4.3 (a):

“For substances hazardous to the aquatic environment shipped under a generic or N.O.S. entry, the proper shipping name shall be supplemented with the recognized chemical name of the [substance hazardous to the aquatic environment] (see 3.1.2.8).

XVI Add new sub-paragraph 5.4.1.4.3(e)

5.4.1.4.3(e) Substances hazardous to the aquatic environment:

Substances hazardous to the aquatic environment, other than those transported under the proper shipping name “Environmentally hazardous substance” (UN 3077 and UN 3082) shall be identified as such by adding the words “SUBSTANCE HAZARDOUS TO THE AQUATIC ENVIRONMENT” immediate preceding or immediate following the dangerous goods description. Examples of such permitted dangerous goods descriptions are:

“UN 2218 ACRYLIC ACID, STABILIZED 8 (3) II, SUBSTANCE HAZARDOUS TO THE AQUATIC ENVIRONMENT” or

“ACRYLIC ACID, STABILIZED, 8 (3), UN 2218, II, SUBSTANCE HAZARDOUS TO THE AQUATIC ENVIRONMENT”

Part 6 Requirements for the construction and testing of packagings, IBC’s large packagings, portable tanks, MEGC’s and bulk containers

No amendments

Part 7 Provisions concerning transport operations

XVII Add new sub-paragraph 7.1.1.6 as follows

7.1.1.6 All operations with [substances hazardous to the aquatic environment] (such as, but not limited to, loading/unloading, stowage and the disposal of spills) shall be done with due regard to its hazards and the mode specific regulations applicable for that mode of transport.

Annex 2

Comparison between the GHS, EU and IMO criteria for substances hazardous to the aquatic environment

- UN, GHS criteria

Acute I	96 hr LC50 (for fish) ≤ 1 mg/l or 48 hr EC50 (for crustacea) ≤ 1 mg/l or 72 hr IC50 (for algae or other aquatic plants) ≤ 1 mg/l
Chronic I	96 hr LC50 (for fish) ≤ 1 mg/l or 48 hr EC50 (for crustacea) ≤ 1 mg/l or 72 hr IC50 (for algae or other aquatic plants) ≤ 1 mg/l and the substance is not rapidly degradable and/or the Log Kow ≥ 4 (unless the experimentally determined BCF < 500)
Chronic II	96 hr LC50 (for fish) $1 \text{ mg/l} < \text{LC50} \leq 10 \text{ mg/l}$ or 48 hr EC50 (for crustacea) $1 \text{ mg/l} < \text{EC50} \leq 10 \text{ mg/l}$ or 72 hr IC50 (for algae or other aquatic plants) $1 \text{ mg/l} < \text{IC50} \leq 10 \text{ mg/l}$ and the substance is not rapidly degradable and/or the Log Kow ≥ 4 (unless the experimentally determined BCF < 500)

- EU (the N-class)

R50	96 hr LC50 (for fish) ≤ 1 mg/l or 48 hr EC50 (for Daphnia) ≤ 1 mg/l or 72 hr IC50 (for algae) ≤ 1 mg/l
R50 R53	96 hr LC50 (for fish) ≤ 1 mg/l or 48 hr EC50 (for Daphnia) ≤ 1 mg/l or 72 hr IC50 (for algae) ≤ 1 mg/l and the substance is not readily degradable and/or the Log Pow ≥ 3 (unless the experimentally determined BCF < 100)
R51 R53	96 hr LC50 (for fish) $1 \text{ mg/l} < \text{LC50} \leq 10 \text{ mg/l}$ or 48 hr EC50 (for Daphnia) $1 \text{ mg/l} < \text{EC50} \leq 10 \text{ mg/l}$ or 72 hr IC50 (for algae) $1 \text{ mg/l} < \text{IC50} \leq 10 \text{ mg/l}$ and the substance is not readily degradable and/or the Log Pow ≥ 3 (unless the experimentally determined BCF < 100)

- IMO (the IMDG code)

Marine Pollutants	<ul style="list-style-type: none"> bioaccumulated to a significant extent and known to produce a hazard to aquatic life or to human health; or bioaccumulated with attendant risk to aquatic organisms or to human health with a short retention of the order of one week or less; or highly toxic to aquatic life, defined by an LC50 less than 1 mg/l
Severe Marine Pollutants	<ul style="list-style-type: none"> bioaccumulated to a significant extent and known to produce a hazard to aquatic life or to human health and are highly toxic to aquatic life, defined by an LC50 < 1 mg/l; or extremely toxic to aquatic life, defined by an LC50 < 0.01 mg/l

- IMO Revised Gesamp Hazard Profiles list (Marpol Annex II, Bulk liquids)








The Revised Gesamp hazard profiles contains all of the information needed for GHS classifications. However this list is comprised of only liquid substances carried in tank-ships and is therefore thought to be too limited to be of use for this identification

Notes

- The differences between the GHS criteria and the N-class criteria are printed in **bold**
- Daphnia is the model organism for crustacea, which means that the 48 hr EC50 values are compatible
- Algae is the model organism for aquatic plants, which means that the 72 hr IC50 values are compatible
- The abbreviations (Log) Pow and (Log) Kow have exactly the same meaning

Annex 3 (in English only)

http://www.kemi.se/nclass

<u>- Main menu -</u> Nordic Council of Ministers in collaboration with European Chemicals Bureau presents		
 Click here to access	The N-CLASS Database on Environmental Hazard Classification version 5.0	
 Click here to access		 Click here to get inf
 Click here to access		
		
News in version 5.0		
<input type="text"/>		

- N-CLASS Database: Substance search report -

Name:	2-Propenoic acid		
Synonym or Group Name:	acrylic acid; prop-2-enoic acid		
CAS No:	79-10-7	EEC No:	2011779
Code No:	D069	Annex I Index No:	607-061-00-8
Aquatic Classification:	N; R50	Based On:	Data
Ozone Classification:			
Water Solubility:	Acute Toxicity: Proposed 0.01mg/l < L(E)C50 < 0.1mg/l Readily degradable: Yes Log Pow: 0,46 BCF:		
Annex I Classification:	R10 Xn; R20/21/22 C; R35 N; R50	N/TPC: <input checked="" type="checkbox"/>	ATP: 28
Summary records:	12-14 June 1996 Meeting on environmental effects 1-3 April 1998 Meeting on environmental effects 27-29 January 1999 Meeting on environmental effects		
Comments:	ECBI/23/96-Rev.1, ECBI/90/95-Add.16, ECBI/24/96-Add.61		