

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

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Item 3 of the provisional agenda

Listing, classification and packing

Proposal to add the toxic subsidiary risk for UN 2248, UN 2264 and UN 2357

Submitted by the expert from the Republic of Korea

Introduction

1. At the forty-seventh session of the Sub-committee, the Republic of Korea proposed (ST/SG/AC.10/C.3/2015/11) that the hazard information in the latest GESAMP Hazard Profiles (PPR.1/Circ.1, Annex 5) could be valuable data to identify any potential toxic or corrosive risk for substances which are listed in the UN Model Regulation
2. Regarding the proposal, some experts expressed their opinions that reclassification of these substances should be based on the detailed test information since the decision could have a great influence on dangerous goods transportation. Therefore, the Sub-committee requested the Republic of Korea to submit hazard information for these substances in the form of Figure 1 in the Model Regulation (ST/SG/AC.10/C.3/2015/CRP.1/Add.1 para 20-22).

Discussion

3. This delegation believes that dangerous goods should be classified based on the latest and reliable test results because this classification under UN Model Regulation has a great impact on the transportation industry. The other hands, the deliberation of the correct hazardous information in the UN Model Regulation is also extremely important for the safe transportation of dangerous goods
4. GESAMP is a group of experts from IMO and other international institutions. The group establishes reliable hazardous data profiles for the protection of marine environment. The Republic of Korea considers the GESAMP hazard profiles are one of the most reliable data. However, it is difficult to use these test results without relevant industry permission because detailed test data to be used for establishment of GESAMP Hazard profiles are private properties.
5. Therefore, the Republic of Korea collected different sources of test data for substances which are already identified as toxic or corrosive under the latest GESAMP hazard profile to confirm any suspicious risk. The test data contained in the annexes of this document is based on international test results and technical papers. This document contains available experimental data of substances for UN 2248, UN2264 and UN2357 which were presented in Figure 6/ Figure7 of the document (ST/SG/AC.10/C.3/2015/11) submitted at 47th session of the Sub-committee in 2015.

6. Based on the data provided by this document, The Republic of Korea will submit formal document in next session of the Sub-committee by reflecting the comments from experts in this session of Sub-committee.

Proposal

7. Dangerous Goods List (DGL) in Model Regulation Chapter 3.2

(1) Revision of UN 2248

- Based on the data presented (Annex I and reference¹ in footnote), UN 2248 satisfies the classification of Division 6.1 PGIII as its LD50 of oral toxicity is 220mg/kg and LD50 of dermal toxicity is 768mg/kg.
- According to the Model Regulation, paragraph 2.0.3.6(Precedence of characteristics), Division 6.1 should be added as subsidiary risk as following table.

UN No.	Name and description	Class or division	Subsidiary risk	UN packing group	Special provision	Limited and excepted quantities		Packagings and IBCs		Portable tanks and bulk containers	
						(7a)	(7b)	Packing instruction	Special packing provisions	Instructions	Special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
2248	DI-n-BUTYLA MINE	8	3 6.1	II	-	1L	E2	P001 IBC02	-	T7	TP2

(2) Revision of UN 2264

- Based on the data presented (Annex II and reference² in footnote), UN 2264 satisfies the classification of Division 6.1 PGIII as its LD50 of oral toxicity is 272mg/kg.
- According to the UN Model Regulation, paragraph 2.0.3.6(Precedence of characteristics), Division 6.1 will be added as subsidiary risk as following table.

¹ References:
European Chemical Agency (ECHA), Dibutylamine - Registration Dossier (<http://echa.europa.eu/registration-dossier/-/registered-dossier/13527/>)
Hazard Substance Data Bank (HSDB) - U.S. National Library of Medicine, DIBUTYLAMINE (<https://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+310>)
International Programme on Chemical Safety (IPCS), DI-n-BUTYLAMINE (ICSC: 1337) (http://www.ilo.org/dyn/icsc/showcard.display?p_card_id=1337)

² References:
European Chemical Agency (ECHA), Cyclohexyldimethylamine - Registration Dossier (<http://echa.europa.eu/registration-dossier/-/registered-dossier/13521/>)

UN No.	Name and description	Class or division	Subsidiary risk	UN packing group	Special provision	Limited and excepted quantities		Packagings and IBCs		Portable tanks and bulk containers	
						(7a)	(7b)	Packing instruction	Special packing provisions	Instructions	Special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
2264	N,N-DIMETHYL-CYCLOHEXYLAMINE	8	3 6.1	II	-	1L	E2	P001 IBC02	-	T7	TP2

(3) Revision of UN 2357

- Based on the data presented (Annex III and reference³ in footnote), UN 2357 satisfies the classification of Division 6.1 PGIII as its LD50 of oral toxicity is 156mg/kg and LD50 of dermal toxicity is >631 - <1000mg/kg.
- According to the UN Model Regulation, paragraph 2.0.3.6(Precedence of characteristics), Division 6.1 will be added as subsidiary risk as following table.

UN No.	Name and description	Class or division	Subsidiary risk	UN packing group	Special provision	Limited and excepted quantities		Packagings and IBCs		Portable tanks and bulk containers	
						(7a)	(7b)	Packing instruction	Special packing provisions	Instructions	Special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
2357	CYCLOHEXYLAMINE	8	3 6.1	II	-	1L	E2	P001 IBC02	-	T7	TP2

³

References:

European Chemical Agency (ECHA), CYCLOHEXYLAMINE - Registration Dossier (<http://echa-term.echa.europa.eu/lv/web/guest/registration-dossier/-/registered-dossier/13348/1>)

Hazard Substance Data Bank (HSDB) - U.S. National Library of Medicine, CYCLOHEXYLAMINE

(<https://toxnet.nlm.nih.gov/cgi-bin/sis/search/a?dbs+hsdb:@term+@DOCNO+918>)

International Programme on Chemical Safety (IPCS), CYCLOHEXYLAMINE (ICSC: 0245) (http://www.ilo.org/dyn/icsc/showcard.display?p_card_id=0245)

Annex 2

Data sheet of N,N-Dimethyl cyclohexylamine (UN 2264)

Section 5. HARMFUL BIOLOGICAL EFFECTS

5.1	LD ₅₀ , oral (2.6.2.1.1 ⁵)	.....272 mg/kg	Animal species	.....Rat
5.2	LD ₅₀ , dermal (2.6.2.1.2)	.....>400 mg/kg	Animal species	.....Rat
5.3	LC ₅₀ , inhalation (2.6.2.1.3)	.....9000 mg/m ³ (air)	Exposure time.....	1 hour
		or .....ml/m ³	Animal species	.....Rat
5.4	Saturated vapour concentration at 20°C (2.6.2.2.4.3)	.....2860 ml/m ³		
5.5	Skin exposure (2.8) results :	Corrosive	Exposure time.....	No data
			Animal species.....	Rabbit
5.6	Other data			
		Corrosive, severe skin and eye irritant, reproductive toxicity, germ cell mutagenicity, carcinogenicity and specific target organ toxicity (single & repeated)		
		<u>Ecological toxicity</u>		
		Fish (<i>Oncorhynchus mykiss</i>), LC₅₀ (96h) : 28mg/L		
		Aquatic plants (<i>Scenedesmus subspicatus</i>), EC₅₀ (72h) : 0.79mg/L		
5.7	Human experience.....			Not applicable

⁵ This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.

