



**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****Fiftieth session**

Geneva, 28 November – 6 December 2016

Item 2 (c) of the provisional agenda

**Recommendations made by the Sub-Committee on its forty-seventh,
forty-eighth and forty-ninth sessions and pending issues: listing, classification and packing****The reflection of toxicity for UN 2248, UN 2264 and UN 2357****Submitted by the expert from the Republic of Korea¹****Introduction**

1. At the forty-seventh session of the Sub-Committee, the expert from the Republic of Korea suggested that the hazard information in the revised GESAMP Hazard Profiles (PPR.1/Circ.1, Annex 5) could be valuable data to identify any potential toxic or corrosive risk for substances (ST/SG/AC.10/C.3/2015/11). In this connection, some substances categorized as class 8 in the Dangerous Goods List are already recognized for their toxicity by many test institutions. Based on this test information, the Republic of Korea selected three substances which have strong toxicity and submitted objective test data related to them (informal document INF.33 (49th session)).

2. In this respect, the Sub-Committee requested the expert from the Republic of Korea to submit an official proposal, taking into consideration the changes to the conditions of transport that would be required as a consequence (ST/SG/AC.10/C.3/98, para. 59).

“The Sub-Committee took note of the proposal and invited the expert from the Republic of Korea to submit an official proposal, indicating the exact source of data so as to allow for verification and taking into consideration the change to the conditions of transport that would be required as a consequence (for example, E Code, tank codes, etc.), if necessary, in the light of the guiding principles.”

¹ In accordance with the programme of work of the Sub-Committee for 2015–2016 approved by the Committee at its seventh session (see ST/SG/AC.10/C.3/92, paragraph 95 and ST/SG/AC.10/42, para. 15).

3. The expert from the Republic of Korea believes that the hazard information in the Dangerous Goods List should be reflected based on the latest and most reliable test data because the classification according to the Model Regulation has a great impact on transport industry.

4. Based on the informal document (INF.33 (49th session)), the expert from the Republic of Korea accepted the comments from the Sub-Committee, and proposes to add Division 6.1 as subsidiary hazard for UN 2248, UN 2264 and UN 2357 in a revised official proposal.

Proposal

5. The expert from the Republic of Korea therefore proposes to amend the Dangerous Goods List in the Model Regulation regarding UN 2248, UN 2264 and UN 2357 as follows:

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	
								Packing instruction	Special packing provisions	Instructions	Special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
2248	DI-n-BUTYL AMINE	8	3 6.1	II	-	1L	E2	P001 IBC02	-	T7	TP2
2264	N,N-DIMETHYL-CYCLOHEXYLAMINE	8	3 6.1	II	-	1L	E2	P001 IBC02	-	T7	TP2
2357	CYCLOHEXYLAMINE	8	3 6.1	II	-	1L	E2	P001 IBC02	-	T7	TP2

6. The information requested in the section 5 of the Data Sheet of Figure 1 of the Recommendations on the Transport of Dangerous goods for justifying a toxicity subsidiary hazard is provided in annexes 1, 2 and 3 of this document.

Annex 2

Data sheet of N,N-Dimethyl cyclohexylamine (UN 2264) ⁴

Section 5 HARMFUL BIOLOGICAL EFFECTS

5.1	LD ₅₀ , oral (2.6.2.1.1 ⁵)	.....272 mg/kg^a	Animal species	.....Rat
5.2	LD ₅₀ , dermal (2.6.2.1.2)	.....>400 mg/kg^b	Animal species	.....Rat
5.3	LC ₅₀ , inhalation (2.6.2.1.3)	.....9000mg/m³(air)^c	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/m³		
5.5	Skin exposure (2.8) results : Corrosive^d		Exposure time	.....No data
			Animal species	.....Rabbit
5.6	Other data ^e			

Corrosive, severe skin and eye irritant, reproductive toxicity, germ cell mutagenicity, carcinogenicity and specific target organ toxicity (single & repeated)

Ecological toxicity

Fish (*Oncorhynchus mykiss*), LC₅₀ (96h) : 28mg/L^f

Aquatic plants (*Scenedesmus subspicatus*), EC₅₀ (72h) : 0.79mg/L^g

5.7 Human experience.....Not applicable

⁴ References :

^aEuropean Chemical Agency (ECHA), Cyclohexyldimethylamine - Registration Dossier (<https://echa.europa.eu/registration-dossier/-/registered-dossier/13521/7/3/2>)

^bEuropean Chemical Agency (ECHA), Cyclohexyldimethylamine - Registration Dossier (<https://echa.europa.eu/registration-dossier/-/registered-dossier/13521/7/3/4>)

^cEuropean Chemical Agency (ECHA), Cyclohexyldimethylamine - Registration Dossier (<https://echa.europa.eu/registration-dossier/-/registered-dossier/13521/7/3/3>)

^dEuropean Chemical Agency (ECHA), Cyclohexyldimethylamine - Registration Dossier (<https://echa.europa.eu/registration-dossier/-/registered-dossier/13521/7/4/2/?documentUUID=00a77466-5f8a-48a9-908c-39fb2a6053a5>)

^eEuropean Chemical Agency (ECHA), Cyclohexyldimethylamine - Registration Dossier (<https://echa.europa.eu/registration-dossier/-/registered-dossier/13521/2/1>)

^fEuropean Chemical Agency (ECHA), Cyclohexyldimethylamine - Registration Dossier (<https://echa.europa.eu/registration-dossier/-/registered-dossier/13521/6/2/2>)

^gEuropean Chemical Agency (ECHA), Cyclohexyldimethylamine - Registration Dossier (<https://echa.europa.eu/registration-dossier/-/registered-dossier/13521/6/2/6>)

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

Annex 3

Data sheet of Cyclohexylamine (UN 2357) ⁶

Section 5 HARMFUL BIOLOGICAL EFFECTS

- 5.1 LD₅₀, oral (2.6.2.1.1⁷) **156 mg/kg^a** Animal species **Rat**
- 5.2 LD₅₀, dermal (2.6.2.1.2) **>631 - <1000mg/kg^b** Animal species **Rabbit**
- 5.3 LC₅₀, inhalation (2.6.2.1.3) no data mg/l Exposure time **no data**
or ml/m³ Animal species
- 5.4 Saturated vapour concentration at 20°C (2.6.2.2.4.3) **13800 ml/m³**
- 5.5 Skin exposure (2.8) results : **Corrosive^c** Exposure time **4 hours**
Animal species **Rabbit**
- 5.6 Other data^d

Corrosive, severe skin and eye irritant, reproductive toxicity, germ cell mutagenicity, carcinogenicity and specific target organ toxicity (single & repeated)

Ecological toxicity

Fish (*Oryzias latipes*), LC₅₀ (96h) : 33mg/L^e

Aquatic invertebrates (*Daphnia magna*), EC₅₀ (24h) : 80mg/L^f

- 5.7 Human experience Not applicable

⁶ References :

^aLewis, R.J., 1996, Sax's Dangerous Properties of Industrial Materials. 9th ed. Volumes 1-3. New York, NY: Van Nostrand Reinhold, p. 960

^bRandall D.J. and Bannister RM, 1990, Acute Toxicologic evaluation of cyclohexylamine. Acute Toxic Data 1, 65

^cEuropean Chemical Agency (ECHA), CYCLOHEXYLAMINE - Registration Dossier (<https://echa.europa.eu/de/registration-dossier/-/registered-dossier/13348/7/4/2/?documentUUID=d516cd27-1283-4151-9832-18a05a74b703>)

^dEuropean Chemical Agency (ECHA), CYCLOHEXYLAMINE - Registration Dossier (<https://echa.europa.eu/de/registration-dossier/-/registered-dossier/13348/2/1>)

^eEuropean Chemical Agency (ECHA), CYCLOHEXYLAMINE - Registration Dossier (<https://echa.europa.eu/de/registration-dossier/-/registered-dossier/13348/6/2/2>)

^fBringmann G and Kuehn R, 1977, Befunde der Schadwirkung wassergefaehrdender Stoffe gegen *Daphnia magna*. Z. Wasser-Abwasser-Forsch. 10, 161

⁷ This and similar references are to chapters and paragraphs in the Model Regulations on the Transport of Dangerous Goods.