



Secretariat

Distr.  
GENERAL

ST/SG/AC.10/C.3/2008/88  
15 September 2008

Original: ENGLISH

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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

Thirty-fourth session  
Geneva, 1-9 December 2008  
Item 4 of the provisional agenda

**LISTING, CLASSIFICATION AND PACKING**

Materials which are Toxic by Inhalation – based on read across

Transmitted by the expert from the Netherlands<sup>1</sup>

**Background**

1. Over the past several years, the Sub-Committee adopted numerous amendments to the Dangerous Goods List regarding substances which are toxic by inhalation. At its thirtieth session, for example, the Sub-Committee amended the portable tank assignments for a number of substances based on data showing them to be toxic by inhalation (see ST/SG/AC.10/C.3/2006/93 of the expert of the United States of America and informal document UN/SCETDG/30/INF.74). At its thirty-third session, the expert from the Netherlands presented further information for a number of substances listed in ST/SG/AC.10/C.3/2006/93 but which were deemed to require additional supporting data (see ST/SG/AC.10/C.3/2008/49 and informal document UN/SCETDG/33/INF.8). Proposals for changes in the entries in the Dangerous Goods List based on substance-specific data presented in ST/SG/AC.10/C.3/2008/49 and informal document UN/SCETDG/33/INF.8 are proposed in a separate joint proposal (ST/SG/AC.10/C.3/2008/87) of the experts of the United States of America and the Netherlands at this thirty-fourth session.

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<sup>1</sup> In accordance with the programme of work of the Sub-Committee for 2007-2008 approved by the Committee at its third session (refer to ST/SG/AC.10/C.3/60, para. 100 and ST/SG/AC.10/34, para. 14).

2. In informal document UN/SCETDG/33/INF.8, the information for 7 isocyanates is based on read across<sup>2</sup>. The International Council of Chemical Associations (ICCA) presented in informal document UNSCETDG/33/INF.36 summaries of inhalation toxicity studies for 4 of these isocyanates: UN 2483 Isopropyl isocyanate, UN 2484 tert-Butyl isocyanate, UN 2485 n-Butyl isocyanate and UN 2488 Cyclohexyl isocyanate.

3. The goal of the present proposal is to further align the packaging and portable tank provisions for 7 isocyanates presented in ST/SG/AC.10/C.3/2008/49 and informal document UN/SCETDG/33/INF.8 which are deemed toxic by inhalation based on read across with the appropriate provisions based on the Guiding Principles. In some cases, it is proposed that the listed classifications also be amended to reflect the precedence of hazard characteristics of 2.0.3 of the Model Regulations. The approach is fully in line with the joint proposal ST/SG/AC.10/C.3/2008/87 of the United States of America and the Netherlands for TIH substances for which full data are available.

### **Read Across**

4. In a read-across, the unknown property of a substance is presumed equal to that of similar compounds with known properties. Read across is widely used within many regulatory frameworks dealing with hazardous chemicals such as the OECD High Protection Volume (HPV) chemicals program, the United States of America new chemicals program, and the European Regulation on "Registration, Evaluation, Authorization and Restriction of Chemicals (REACH).

5. Isocyanates contain the highly reactive  $N=C=O$  group whose reactivity is generally considered to cause the wide range of respiratory health effects observed after isocyanate exposure. These effects include among others extreme irritation, asthma, hypersensitivity pneumonitis, and pulmonary edema which can lead to death.

6. The expert from the Netherlands judges the quality of the read across information as described in informal document UN/SCETDG/33/INF.8 sufficient to justify classification. The arguments for read across for the isocyanates in question are included in paragraph 3.1.3 of informal document UN/SCETDG/33/INF.8.

7. Furthermore, in informal document UN/SCETDG/33/INF.36, ICCA presented results of inhalation toxicity studies for the substances UN 2483 (Isopropyl isocyanate), UN 2484 (tert-Butyl isocyanate), UN 2485 (n-Butyl isocyanate) and UN 2488 Cyclohexyl isocyanate. Although we were not able to evaluate the information in detail, the results as presented in INF.36 all direct to classification in division 6.1, Packing Group I, fulfilling the criteria  $LC50 \leq 1000$  ppm and separated vapour concentration  $\geq 10$  LC50.

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<sup>2</sup> For a more complete description of the read across arguments (see informal document UN/SCETDG/33/INF.8, p.22).

## Proposal

8. In line with the joint proposal ST/SG/AC.10/C.3/2008/87 of the United States of America and the Netherlands for TIH substances for which full data are available the following is proposed.

9. It is proposed that the below listed entries in the Dangerous Goods List be amended as follows:

(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
2481	ETHYL ISOCYANATE	<del>3</del> 6.1	<del>6+</del> 3	I	3XX	0	E0	<del>P601</del> P602		<del>F14</del> T20	TP2 TP13 TPXX
2482	n-PROPYL ISOCYANATE	6.1	3	I	3XX	0	E5	<del>P001</del> P602		<del>F14</del> T20	TP2 TP13 TPXX
2483	ISOPROPYL ISOCYANATE	<del>3</del> 6.1	<del>6+</del> 3	I	3XX	0	E0	<del>P001</del> P602		<del>F14</del> T20	TP2 TP13 TPXX
2484	tert-BUTYL ISOCYANATE	6.1	3	I	3XX	0	E5	<del>P001</del> P602		<del>F14</del> T20	TP2 TP13 TPXX
2486	ISOBUTYL ISOCYANATE	<del>3</del> 6.1	<del>6+</del> 3	<del>H</del> I	3XX	<del>H</del> 0	<del>E2</del> E5	<del>P001</del> P602		<del>F8</del> T20	TP2 TP13 TPXX
2488	CYCLOHEXYLISOCYANATE	6.1	3	I	3XX	0	E5	<del>P001</del> P602		<del>F14</del> T20	TP2 TP13 TPXX
2605	METHOXYMETHYL ISOCYANATE	<del>3</del> 6.1	<del>6+</del> 3	I	3XX	0	E0	<del>P001</del> P602		<del>F14</del> T20	TP2 TP13 TPXX

10. It is proposed to add a new special provision 3XX to Chapter 3.3 as follows:

“3XX This substance is toxic by inhalation.”.

11. It is proposed that a new TPXX be added to 4.2.5.3 as follows:

“TPXX: The portable tank instructions prescribed in the Model Regulations annexed to the 15<sup>th</sup> revised edition of the Recommendations on the Transport of Dangerous Goods may continue to be applied until 31 December 2016.”.

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