

## 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-four session  
Geneva, 1-9 December 2008  
Item 4 of the provisional agenda

### LISTING, CLASSIFICATION AND PACKING

#### Toxic by inhalation substances

#### Comments on ST/SG/AC.10/C.3/2008/87

#### Transmitted by the International Council of Chemical Associations (ICCA)

1. Document ST/SG/AC.10/C.3/2008/87 makes proposals for reclassifying a number of substances based upon ST/SG/AC.10/C.3/2008/49 from the Netherlands and UN/SCETDG/33/INF.8, which contains the results of the study by RIVM (National Institute for Public Health and the Environment) on toxic by inhalation properties
2. The results for UN 1838 (Titanium Tetrachloride or  $TiCl_4$ ) have meanwhile been reviewed by the manufacturers of this substance and they are offering the following comments on this study of RIVM.
3. RIVM has considered  $TiCl_4$  as a vapour (see Table 1 in part 3 Results) both for extrapolating the LC50 4h value into a LC50 1hr value, as well as for determining the Saturated Vapour Concentration. However by definition a vapour has the same chemical formula as the liquid it comes from. According to Annex 1 of EU Directive 67/548/EEC (Risk Phrase R14), ERPG, ATSDR, IUCLID, Cameo, etc.  $TiCl_4$  is water reactive and spilled product will immediately react with the ambient air moisture hydrolysing into opaque and acidic smog, which is more like a mist. Due to this immediate hydrolysis reaction and formation of acidic smog, the vapour pressure and the Saturated Vapour Concentration (SVC) of  $TiCl_4$  and similar water-reactive products have no longer a physical meaning and can therefore not be used in this context.
4. Document ST/SG/AC.10/C.3/2008/87 proposes  $TiCl_4$  to be classified as a substance of Class 6.1 because of its inhalation toxicity. However subsection 2.6.2.2.4.1 (Grouping criteria for administration through oral ingestion, dermal contact and inhalation of dusts and mists) specifies in a note that "Substances meeting the criteria of class 8 and with an inhalation toxicity of dusts and mists (LC50) leading to packing group I are only accepted for an allocation to Division 6.1 if

the toxicity through oral ingestion or dermal contact is at least in the range of PG I or II. Otherwise an allocation to Class 8 is made when appropriate (see 2.8.2.3)". The dermal toxicity of TiCl<sub>4</sub> on rabbit (LD<sub>50</sub>) is 3160 mg/kg (ERPG 1992 and IUCLID 2000) and the oral toxicity (LD<sub>100</sub>) is 464 mg/kg (ERPG 1992 and IUCLID 2000): therefore according to the table in 2.6.2.2.4.1 TiCl<sub>4</sub> does not fall into PG I or PG II for oral and dermal toxicity and should remain classified in class 8.

5. In the meantime, at its 15<sup>th</sup> session during the discussion of ST/SG/AC.10/C.4/2008/10 on classification criteria for substances and mixtures, which in contact with water, release toxic gases UNSCEGHS concluded that only when the work on test N.5 is finalized (task deferred to UNSCETDG), it would reconsider any issues related to the classification of these substances and mixtures. Meanwhile France and Germany have introduced ST/SG/AC.10/C.3/2008/68 and ST/SG/AC.10/C.4/2008/19 listing the tasks of the work to be carried out in the review of test method N.5. In paragraph 6 (d) reference is made to consider also whether the amended test method N.5 could be applicable to measure corrosive gases released in contact with water.

6. TiCl<sub>4</sub> is certainly one of the substances, which should be considered in this work as the toxicity of the product is due to the acidity/corrosivity of the mist resulting from its water reactivity (ERPG, ATSDR.... ). It is therefore premature to take a decision on reclassifying TiCl<sub>4</sub> before the review of test method N.5 has been completed.

7. In view of the arguments, listed above, ICCA suggests maintaining the current classification of TiCl<sub>4</sub>.

8. ICCA is also willing to participate into this Working Group that would be set up to review test method N.5.

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