

## 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

2 June 2010

Thirty-seventh session

Geneva, 21–30 June 2010

Item 3 of the provisional agenda

Listing, classification and packing

### 4.1.4.1 P200 Materials compatibility requirements for gases in pressure receptacles – Further comments on UN/SCETDG/37/INF.15, paragraphs 5 to 7

#### Transmitted by the International Organization for Standardization (ISO)

1. Details of the further deliberations of ISO/TC58/WG7 are given below to explain why it decided not to adopt the text proposed in paragraph 6 of informal document INF.15 in the standard ISO 11114-1.
2. The vigorous exothermic reaction which lead to the failure of the aluminium alloy cylinder in Dubai would not have occurred if the gases present had been only:
  - (a) Ethyl chloride and the inert pressurising gas; or
  - (b) The trace additions of 1,1,1-trichloroethane and trichloroethylene pressurised by an inert gas.
3. In other words, it was necessary for there to be both the trace additions of the two chlorinated hydrocarbon solvents and ethyl chloride. We know that the chlorinated hydrocarbons listed in the draft text can be safely packed in aluminium alloy cylinders with an inert gas since a major Japanese speciality gas supplier has been successfully supplying such calibration mixtures for many years in aluminium alloy AA6061. Therefore, the text as drafted overstates the risk since there is no hazard with many gas mixtures.
4. The failure of the cylinder was due to a vigorous exothermic reaction which can only take place in very specific circumstances and it is believed that forbidding the use of ethyl chloride in the regulations (and in the standard) closes the route to initiating such a reaction.
5. The literature suggests that the reaction is specific to ethyl chloride. Even if the reaction could be supported by other chemical species, the potential candidates e.g. methyl chloride, methyl bromide, vinyl chloride etc. are also forbidden for use with aluminium alloy.
6. The decision of ISO/TC58/WG7 therefore, is not to include the warning shown in italics in paragraph 6 of informal document INF.15 in the standard ISO 11114-1 and it also recommends that with the changes of wording adopted at the thirty-sixth session and the current application of special packing provision "a" in P200, the risks of a repeat incident are addressed satisfactorily in the Model Regulations.