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-first session
Geneva, 2-6 July 2007
Item 3(a) of the provisional agenda

LISTING, CLASSIFICATION AND PACKING

Comments on ST/SG/AC.10/C.3/2007/22

Transmitted by the expert from the United Kingdom

1. In the paper ST/SG/AC.10/C.3/2007/22 the expert from the United States of America asks for 1-Hydroxy benzotriazole monohydrate to be included in UN 3474 based on test results which were not included in the INF paper UN/SCETDG/30/INF.27. This had its origins in a working paper (ST/SG/AC.10/C.3/2005/29), submitted by the expert from Germany for the December 2005 session and a subsequent INF paper (UN/SCETDG/29/INF.22) also from Germany the following July.

Comments

2. The expert from the United Kingdom has examined the proposal and data in the United States of America paper and finds it difficult to accept this on the basis of the information contained in the report and the test data detailed in the Annex to the paper. The flow diagram for the classification of explosives and desensitized explosives requires the substance to have undergone Test Series 2, 3, 4, and 6. We do not have any data for HOBT monohydrate in Test Series 2 in the United States of America paper or UN/SCETDG/29/INF.22 (this paper has information concerning HOBT anhydrous in 10%, 12.9% and 20% water rather than the hydrated molecular form of the compound).

The information in UN/SCETDG/29/INF.22 suggests that HOBT with 12.9% and 10% water gives Koenen values of 3mm and 3.5mm respectively. Given that the water of hydration amounts to 11.7% it may be expected that the Koenen value would be in the order of 3 – 3.5mm making it a candidate for Class 1 but we do not yet know the Koenen value for HOBT monohydrate. Unfortunately, it is not possible to compare the USA results with the German results for the anhydrous material except for the Time Pressure test which was found to give a positive for the anhydrous material and a negative for the hydrated form.

3. When deciding to include anhydrous HOBT should be included in Class 1 the German working paper contained the following conclusion:

"It should not be necessary to perform tests of Test Series 6 because the test results of Test

> Series 1 and 2 show the high sensitivity of the substance to shock, the violent effect of heating under confinement and the ability to propagate a deflagration very rapidly."

We do not have sufficient information from Test Series 1 & 2 to make a similar comparison to the statement above.

The United States of America proposes that HOBT monohydrate be included in UN 3474 but this entry has Special provision 28 which states:

> “This substance may be transported under the provisions of Division 4.1 only if it is so packed that the percentage of diluent will not fall below that stated, at any time during transport (see 2.4.2.4).”

As the “diluent” in HOBT is locked within the HOBT molecule it is difficult to say how this provision can be met.

If any of the monohydrate loses its water of hydration it will convert to the anhydrous form and, as has been stated in paragraph 8 of UN/SCETDG/29INF.65, the July 2006 report of the Explosives Working Group it is very difficult to convert back to the monohydrate. The anhydrous form of HOBT is classed as an explosive unless it is wetted with 20% water. It is possible that during transport, the water of hydration to be lost as water within the package leading to the formation of anhydrous HOBT.

4. The United Kingdom expert would prefer to wait for the results of the Koenen test on HOBT monohydrate so a comparison can be made to the data provided by Germany for the anhydrous HOBT used to create UN 0508 and UN 3474.
