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

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PROPOSALS OF AMENDMENTS TO THE RECOMMENDATIONS ON THE TRANSPORT OF DANGEROUS GOODS

Model Regulations on the Transport of Dangerous Goods

Comments on ST/SG/AC.10/C.3/2006/84

Transmitted by the expert from Canada

Introduction

1. The expert from the United Kingdom believes the definition in Note 2 to 2.1.3.5.5 is inadequate, as discussed in ST/SG/AC10/C.3/2006/84. Fireworks drawings seen in classification applications in the United Kingdom have apparently shown a trend for the bursting charges or report effects to be altered so they no longer meet the definition in Note 2. Under the current definition these pyrotechnic compositions, such as oxidizer and organic compounds, would not be considered as flash composition and this could result in the firework classifications based on the table in 2.1.3.5.5 being wrongly assigned.

2. The expert from the United Kingdom proposes that the current Note 2 to 2.1.3.5.5 should be replaced by the following: "Flash composition" in this table refers to pyrotechnic compositions in powder form or as pyrotechnic units as presented in the fireworks which give a minimum time/pressure value of 4ms for 0.5g of pyrotechnic composition in Test Series 2(c)(i) "Time pressure test".

3. While the expert from Canada agrees that a performance-based definition of flash composition is better than a definition based on formulation, Canada believes that the United Kingdom proposal needs to be modified, as outlined below.

Comments

4. The proposed wording does away with all notion of formulation and intended use. In effect, this means that all pyrotechnic compositions within an article that, according to the default table, has a limit on the amount of "flash", would potentially need to be tested. For example,

all pyrotechnic units and propellant charges in roman candles would in principle need to be tested for "flash" behaviour, so as to determine whether flash composition were present and at what percentage. In the old definition, "flash compositions" were only those that are "...used to produce an aural report effect or used as a bursting charge in fireworks devices". The expert from Canada suggests that we keep a similar phrase.

5. The United Kingdom proposal could create problems for manufacturers, as they would not be able to rely on formulation to determine whether a composition was "flash" or not. The expert from Canada suggests that some wording on intended use be retained, so that there would be a conservative default position that did not require testing.

Proposal

6. Based on the observations above, the expert from Canada proposes the following alternative wording to that proposed by expert the from the United Kingdom:

"Flash composition" in this table refers to pyrotechnic compositions in powder form or as pyrotechnic units as presented in the fireworks, <u>that are used to produce an aural report effect or used as a bursting charge in fireworks devices, unless demonstrated to</u> give a time/pressure value of <u>more than</u> [4ms] for 0.5g of pyrotechnic composition in Test 2(c)(i) "Time/pressure test".

Other considerations

7. The proposal to use an existing test (Test Series 2(c)(i) "Time pressure test") is sensible, but Canada does have some reservations about its use in this context. The sample size may be too small (0.5 g), for example. Potential "flash" compositions are present in much larger quantities as burst charges in medium-sized shells. It is well known that there is a significant scaling effect for deflagration-to-detonation behaviour. Rapid reaction in the time-pressure test should be a good indicator for “flash” behaviour, but a larger-scale test may be more appropriate.

8. The expert from Canada would like to offer as a general comment on Test Series 2(c)(i) "Time pressure test" that there are very few sources of primed cambric and that there needs to be an alternative ignition source for the test.

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