

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

30 May 2012

Forty-first session

Geneva, 25 June – 4 July 2012

Item 2 (a) of the provisional agenda

Explosives and related matters: test series 8

Review of Test Series 8 – Test 8(a) Thermal Stability Test for ANE

Transmitted by the Australian Explosives Industry Safety Group (AEISG)

Introduction

1. At its thirty-ninth session the Explosives Working Group discussed issues of difficulty in conducting tests outlined in the UN Manual of Tests and Criteria, in particular the specifications for materials employed in the tests.
2. As an interim solution, the working group referred to Section 1.1.2 of the Test Manual that advises that the Competent Authority can and should use its discretion in applying the tests and allowing variations in test materials and procedures described in the Test Manual. The working group also agreed that it should conduct a review of the tests mentioned in Parts I and II of the manual with a view to:
 - Better defining the specifications of the tests,
 - Better defining the tolerances associated with those specifications, and
 - To remove any unnecessary or over-specifications.
3. Australia offered to coordinate a survey of experts on the basis of permitted variations to Test Series 8 and IME offered to coordinate the work, along with USA and Canada, on Test Series 6. Australia has presented the results of its survey.
4. This paper seeks to add further issues in relation to Test 8(a), Thermal Stability Test for ANE, for clarification and/or discussion.

Discussion

5. Section 18.4.1.2.5 of the UN Manual of Tests and Criteria requires that the heat loss characteristics of the system used for the Thermal Stability Test need to be established. This is to be done by determining “*the half-time of cooling of the vessel filled with an inert substance having similar physical properties*”. The specific heat of that inert substance would need to be known. The relevant formula used to determine the heat loss per unit of mass is included.
6. Section 18.4.1.2.6 indicates that vessels “*with a heat loss of 80 to 100 mW/kg.K are suitable*”.

7. The following questions and/or suggestions have been raised in relation to this test:
- Can water be used to establish heat loss characteristics of the system here?
 - Can the formula be made more explicit by the appropriate placement of brackets?
 - Does the heat loss need to be between 80 and 100 mW/kg.K?
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