
**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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Item 42 of the provisional agenda

EXPLOSIVES, SELF-REACTIVE SUBSTANCES AND ORGANIC PEROXIDES

Test series 8 and Classification of UN3375

Transmitted by the expert from Australia

SCOPE

This proposal aims to propose action that may be taken in respect of test series 8(d).

RELATED DOCUMENTS

- UN/ST/SG/AC.10/C.3/2005/6 - (The Netherlands) Report of the WG on Ammonium Nitrate Emulsions (ANE), Suspensions and Gels and Tests Series 8
UN/ST/SG/AC.10/C.3/2005/11 - (Spain) Procedure and criterion for the Modified Vented Pipe Test
UN/ST/SG/AC.10/C.3/2005/14 - (United Kingdom) Test series 8
UN/SCETDG/25/INF.102 - Report of the Working Group on Explosives (cont'd)
UN/SCETDG/26/INF.6 - (Spain) Test series 8, ANEs
UN/SCETDG/27/INF.7 - (Sweden) Comments on ST/SG/AC.10/C.3/2005/11 and ST/SG/AC.10/C.3/2005/14
UN/SCETDG/27/INF.39 - Report of the Working Group on Explosives.
UN/ST/SG/AC.10/C.3/52 – Report of the Sub-Committee of Experts on its 26th Session
UN/ST/SG/AC.10/32/Add.1 – Report of the Committee of Experts on its 2nd Session
UN/ST/SG/AC.10/C.3/54 – Report of the Sub-Committee of Experts on its 27th Session

Introduction

1. The report of the Informal Working Group on Ammonium Nitrate Emulsions (ANE), Suspension and Gels and Tests Series 8 (ST/SG/AC.10/C.3/2005/6) highlights a range of issues and concerns related to Test series 8 in respect of ammonium nitrate emulsions, suspension and gels classified as UN3375, class 5.1. For each of the four tests, namely:
 - i. test series 8(a), 8(b) and 8(c) employed to classify ammonium nitrate emulsions, suspension and gels as Class 5.1, UN3375; and
 - ii. test series 8(d) used to determine if it is safe to transport these formulations in tanks.

Various experts raised concerns about the validity of the test and, in many cases, suggested alternatives. It should also be noted that similar concerns were highlighted in the report of the

Working Group on explosives submitted during the 26th session (UN/SCETDG/26/INF.102) that lead to the establishment of the informal Working Group.

2. While ST/SG/AC.10/C.3/2005/6 has improved our knowledge of the issues surrounding ammonium nitrate emulsions, suspension and gels the subsequent discussion of these issues by the working group on explosives did not provide a solution that provides a testing regime that can be applied with confidence. This being said there appeared to be a greater degree of confidence in test series 8(a), 8(b) and 8(c) than there was in test series 8(d). This conclusion is supported by the summary given in the report of the 27th session and by the options identified by the chairman of the working group in UN/SCETDG/27/INF.39:
 1. delete test 8(d) from Test Series 8;
 2. leave the current test as it is; or
 3. accept the Spanish proposal in square brackets.
3. The general view of the working group was that a large scale test is necessary but the group could not make a decision as it was recognised that the issue of vent size has not been resolved and there is a need for considerably more work on this issue. It was intended that a new proposal be put forward in the July 2006 session to resolve outstanding issues.
4. In noting that the the classification system for dangerous goods is intended to identify the "type of risk" associated with a particular good (refer to Volume 1, paragraph 6 on page 2 of the UN Model Regulations) it seems reasonable to assume that where substances are manufactured for use as an explosive, and transported in tanks, then the potential risk associated with that good should be clearly displayed. This is necessary to provide advice to those who have no particular knowledge of the product. The outcome of the discussion in respect of series 8(d) appears to indicate that Test Series 8(d) fails in this respect, as it cannot be relied upon to determine the potential explosion risk that may be faced in a transport accident/fire situation.

Issues

5. It appears possible that there will be no easy answer in respect of resolving issues identified by the Informal Working Group. There appears to be common agreement that under certain circumstances formulations currently classified as UN3375 will behave in a manner consistent with a Class 1 material when involved in a fire, particularly when carried in tanks. This can be replicated in tests depending on the nature of the test employed. But, at this stage, no single test that has been proposed will provide a consistent result to determine the level of risk in this regard **for all** the formulations currently considered to be Class 5.1, UN3375.
6. It is noted that some members have concerns about the safety of transport within their own jurisdiction to the extent that UN3375 is treated as a Class 1.5 material either through reclassification as UN0482 or through treating UN3375 as an explosive in domestic legislation. The latter measure has been employed in domestic legislation within Australia. It appears contrary to the nature and purpose of the UN Model Regulations (to ensure the safety of people, property and the environment) that members feel the necessity to apply more stringent requirements than those contained within the Model Regulations, due to concerns about the veracity or otherwise of the requirements in respect of a particular substance.

Proposal

7. Noting that while there are still issues with test series 8(a), 8(b) and 8(c) there is greater confidence in these tests than in test series 8(d). Valid concerns exist in respect of the testing designed to ensure the safe carriage of UN3375 in tanks but it appears a solution will not be determined in the immediate future.
 8. In order to ensure that the UN Model Regulations reflect the risk associated with the carriage of a particular commodity in a given package it is recommended the entry for UN3375 not include the option for carriage in tanks. Where Ammonium Nitrate Emulsions (ANE), Suspension and Gels are to be carried in tanks they should be Classified, as a minimum, as EXPLOSIVE, BLASTING TYPE E, Class 1.5D, UN0332. For this proposal to be adopted:
 - i. The entry for UN3375 needs to be amended to delete T1 as well as TP1, TP9, TP17 and TP32. In addition it is recommended a new special provision 3xx be inserted to the effect:

“Where Ammonium Nitrate Emulsions (ANE), Suspension and Gels are to be carried in tanks they are to be transported as UN0332 and are to comply with that entry.”
 - ii. The text of Test series 8(d) should be deleted from the Manual of Test and Criteria.
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