

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

16 June 2016

Sub-Committee of Experts on the Transport of Dangerous Goods

Forty-ninth session

Geneva, 27 June – 6 July 2016

Item 2 (i) of the provisional agenda

Explosives and related matters: miscellaneous

Transport of PENTAERYTHRITE TETRANITRATE (PETN) with less than 25 % but more than 9% of water

Transmitted by the expert from Spain

Introduction

1. On May 2015 Spain presented in an informal document at the 47th session the possibility of transporting PETN with less than 25 % but more than 9 % of water (INF.8, 47th session). The purpose of that informal document was to trigger analysis and discussion in the Explosives Working Group (EWG), before presenting a formal document, if the debates were in line with the proposal.
2. During the discussion a number of members of the EWG commented interesting issues in relation with possible specific behaviours of different types of PETN, especially related with the homogenous distribution of the water and the possibility of segregation of the water from the PETN.
3. After an offering by BAM, it was concluded that (Report of the explosives working group, informal document INF.53 (47th session)) *“The work will continue. As noted, Germany will do some independent tests and share the data with the working group. Spain will consider the working group comments and the additional data provided by Germany as it considers a proposal for the 49th session”*.
4. For the aforesaid tests, a Spanish company provided BAM on September 2015 with a sample of wetted PETN.
5. BAM has presented for the present session the test results obtained in the informal document INF.9 (49th session).

Test results

6. The results reported by BAM for test 3 (b) (i): BAM friction apparatus differs significantly with the ones obtained by LOM as a part of the dossier for the approval of the transport of PETN with less than 25% of water by the Spanish Authorities, according to the Special Provision 266 for UN 0150 (see Annex).

Proposal

7. Taking into account the abovementioned differences, and trying to search for the root of these, it is suggested to perform a round robin test with interested laboratories. Spain would be ready to submit test material for all interested laboratories and to lead these tests.

Annex

Tests 3 (a) (ii) and 3 (b) (i) performed by LOM

PETN with 9% of water (January 2005)

Test 3 (a) (ii): BAM Fallhammer

<i>Fall Height (cm)</i>	<i>Weight (kg)</i>	<i>Number of trials</i>	<i>Positive Results</i>
60	5	3	1
50	5	4	1
40	5	6	0
40	5	6	0

Limiting impact energy 25J

Test 3 (b) (i): BAM friction apparatus

<i>Load (N)</i>	<i>Number of trials</i>	<i>Positive Results</i>
160	2	1
120	3	1
80	6	1
60	6	0

Limiting load: 80 N

PETN with 12% of water (March 2016)

Test 3 (a) (ii): BAM Fallhammer

<i>Fall Height (cm)</i>	<i>Weight (kg)</i>	<i>Number of trials</i>	<i>Positive Results</i>
40	5	3	1
30	5	6	1
20	5	6	0

Limiting impact energy 15J

Test 3 (b) (i): BAM friction apparatus

<i>Load (N)</i>	<i>Number of trials</i>	<i>Positive Results</i>
120	2	1
108	6	1
96	6	0

Limiting load: 108 N