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**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**
(Twenty-third session, 30 June - 4 July 2003,
agenda item 3 (b))

EXPLOSIVES, SELF-REACTIVE SUBSTANCES AND ORGANIC PEROXIDES

Definition of ammonium nitrate emulsions, suspensions and gels

Transmitted by the expert from Spain

SCOPE

This proposal is to amend Special Provision 309 in order to include provision for the ingredients used in Ammonium Nitrate Suspensions and Gels.

BACKGROUND

At its December 2002 meeting, the Committee approved the inclusion of Test Series 8 in the Manual of Tests and Criteria. Tests 8(a), 8(b) and 8(c) should be used to establish whether an ammonium nitrate emulsion or suspension or gel, intermediate for blasting explosives (ANE) may be assigned to Class 5.1 (UN 3375).

At the request of the ANE Working Group in July 2002, Spain performed draft Tests 8(a), 8(b) and 8(c), for ammonium nitrate suspensions. The formulations tested were not current commercial formulations and were chosen to test the highest likely concentrations of different ingredients.

The results of these tests were presented in the report UN/SCETDG/22/INF.4. As it is shown in this report, the formulations tested have clearly passed the Tests 8(a), 8(b) and 8(c), showing lower sensitivity than standard emulsions.

The Spanish proposal for including these test results in “Examples of results” for Tests 8(a), 8(b) and 8(c) in the new edition of the Manual of Tests and Criteria, was not adopted, because several experts considered that the tests had been performed on suspensions the composition of which did not conform to the definition in Special Provision 309. This Special Provision describes a range of formulations for emulsions, suspensions and gels, which although appropriate for usual emulsion compositions, it is not broad enough to include suspensions.

This proposal is to rectify that situation: to amend SP 309 in order to include provision for the various unique ingredients used in suspensions and gels. The proposal is based on the tests reported in INF.4 and more comprehensive tests, which at present Spain is carrying out and which will be reported to the Subcommittee as INF documents through May or June 2003.

RECOMMENDATION

Amend Special Provision 309 of Chapter 3.3 (amendments are shown in bold) as follows:

“309 This entry applies to non sensitised emulsions, suspensions and gels consisting primarily of a mixture of ammonium nitrate and a fuel phase, intended to produce a Type E blasting explosive only after further processing prior to use.

The mixture for emulsions typically has the following composition: 60-85% ammonium nitrate; 5-30% water; 2-8% fuel; 0.5-4% emulsifier agent; 0-10% soluble flame suppressants; and trace additives.

The mixture for suspensions and gels typically has the following composition: 60-85% ammonium nitrate; 0-12% perchlorate; 0-17% water soluble amine nitrate salts; 5-30% water; 2-15% fuel; 0.5-4% thickening agent; 0-10% soluble flame suppressants; and trace additives.

Other inorganic nitrate salts may replace part of the ammonium nitrate.

Substances shall satisfactorily pass Test Series 8 of the *Manual of Tests and Criteria*, Part I, Section 18”
