

## 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 3 (b) of the provisional agenda

### EXPLOSIVES, SELF-REACTIVE SUBSTANCES AND ORGANIC PEROXIDES

#### Ammonium nitrate emulsions

Revision of document ST/SG/AC.10/C.3/2004/25

#### Proposal for a new UN number

Transmitted by the expert from Sweden

### **Explanatory notes**

After internal discussion we have decided to revise document ST/SG/AC.10/C.3/2004/25. The old document is hereby withdrawn and replaced by the revised text as follows.

### **Introduction**

During the 23<sup>rd</sup> session of the UNSCETDG in 2003, a paper was presented by Spain (UN/SCETDG/23/INF.12) proposing that SP309 supporting UN No 3375 for ammonium nitrate emulsions, suspensions and gels be modified to include chemical sensitizers such as sodium or potassium perchlorate, hexamine nitrate and/or monomethylamine nitrate. The paper was based on work carried out in Spain (UN/SCETDG/23/INF.32) on chemically sensitized suspensions all of which gave negative results in Test Series 8 (a), 8 (b) and 8 (c), and in the modified vented pipe test (MVPT) proposed as Test Series 8 (d) by Australia at the 21<sup>th</sup> session of the UNSCETDG in 2002 (UN/SCETDG/21/INF.69).

Even though these test results show a promising behavior, the Swedish delegation is reluctant to accept that UN number 3375 is used for this new type of chemically sensitized emulsions, suspensions and gels. UN number 3375 is intended for AN, water, fuel, emulsifiers and flame suppressants only. When this UN number was introduced there were a great concern about the possible formulas of the ANE's. To widen up UN 3375 with formulations containing other reactive substances such as perchlorates, hexamines, etc. means that we lose control of UN 3375.

### **Proposal**

The expert from Sweden therefore proposes to:

- (1) Introduce a new UN number 3XXX, supported by a new entry Special Provision 3ZZ, be assigned to *chemically sensitised* emulsions, suspensions and gels under Class 5.

The new Special Provision 3ZZ for UN No 3XXX would read:

“3ZZ This entry applies to chemically sensitized emulsions, suspensions and gels consisting primarily of a mixture of ammonium nitrate plus chemical sensitizing agents with a fuel phase, intended to produce a Type E blasting explosive only after further processing prior to use.

The mixture typically has the following composition: 60-85% ammonium nitrate; 0-5% sodium or potassium perchlorate; 0-17% hexamine nitrate or monomethylamine nitrate; 5-30% water; 2-8% fuel; 0.5-4% emulsifier or thickening agent; 0-10% soluble flame suppressants; and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate.”

The new entry in the “Recommendations on the Transport of Dangerous Goods. Model Regulations” would read:

UN No	Name and description	Class or division	Subsidiary risk	UN packing group	Special provision	Limited quantities	Packing and IBC's		Portable tanks and bulk containers	
							Packing instruction	Special packing provisions	Instructions	Special provisions
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
3XXX	CHEMICALLY SENSITISED AMMONIUM NITRATE EMULSION or SUSPENSION or GEL, intermediate for blasting explosives	5.1		II	3ZZ	NONE	P099 IBC99		T1 T2	TP1 TP9 TP17 TP32

(2) That the existing Special Provision 309 for UN No 3375 would remain unchanged, reading:

“309 This entry applies to non-sensitized 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 typically has the following composition: 60-85% ammonium nitrate; 5-30% water; 2-8% fuel; 0.5-4% emulsifier or thickening agent; 0-10% soluble flame suppressants; and trace additives. Other inorganic nitrate salts may replace part of the ammonium nitrate.”

(3) That the Test Series 8 be retained as part of the test regime for both unsensitized (UN 3375) and chemically sensitized (UN 3XXX) emulsions, suspensions and gels, at least for the current biennium. It may be appropriate to revise the supporting Test Series in the future in the light of any further new experimental information on the hazards of these materials.