

**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

Thirty-second session  
Geneva, 3-7 December 2007  
Item 6 of the provisional agenda

**MISCELLANEOUS PROPOSALS OF AMENDMENTS TO THE MODEL  
REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS**

Definition of Phlegmatized

Transmitted by the Expert from Australia

**SCOPE**

This proposal recommends the inclusion of a definition for Phlegmatized in the UN Model Regulations.

**Introduction**

1. The Australian Forum of Explosives Regulators (AFER) is updating the Australian Explosive Code (AEC) to reflect the 15<sup>th</sup> Edition of the UN Model Regulations (UN15). As part of this process the requirements of UN15 have been examined closely.

2. It has been noted that the terms phlegmatize, phlegmatized or phlegmatizer are not in common use, nor are they included in standard English language dictionaries. However, the terms phlegmatized or phlegmatizer are used in UN15 in a number of locations in respect of Class 1 goods, specifically:

Phlegmatizer: Section 3.1.1.4  
Section 4.1.1.7  
Packing Instruction P406, additional requirement 1  
PSN for UN0075, UN0143, UN0150 and UN0391 (DGL and index)  
Special Provision 266  
Special Provision 271

Phlegmatized: Section 4.1.4.8  
Special Provision 131  
Special Provision 227

3. Within the Proper Shipping Names (PSN) for UN0075, UN0143, UN0150 and UN0391 ‘phlegmatizers’ is used in two ways to describe the means of desensitising particular substances. For UN0075 and UN0143 the product is desensitised with a non-volatile water-insoluble phlegmatizer, while UN0150 and UN0391 are simply desensitised by a phlegmatizer with no reference to volatility or solubility.

### Issues

4. The lack of a commonly accepted definition for the terms phlegmatized or phlegmatizer in the UN Model Regulations increases the potential for inconsistent interpretation.

5. The Expert from Australia currently interprets the term “phlegmatized” to apply to an explosive that has had an agent (or “phlegmatizer”) added to stabilize or desensitize the explosive. For the UN numbers identified above, this is desirable to enable the safe handling and transport of these goods in the packages prescribed in the dangerous goods list. The theory is that the phlegmatizer acts as a barrier between molecules of the explosive to slow down the heat transfer and any resultant reaction and reduce impact and friction sensitivity. Typical phlegmatizing agents include wax, paper, water, alcohol, oils such as petroleum jelly and paraffin, as well as particular polymeric materials.

6. The phlegmatizing of materials is not limited to UN0075, UN0143, UN0150 and UN0391, with many sensitive explosives incorporating a phlegmatized material; e.g. dynamite can be considered a phlegmatized form of nitro-glycerine. In some cases the phlegmatizer, or a phlegmatized explosive, may include a dye to distinguish the desensitised product from its more sensitive explosive form.

### Recommendation

7. The Expert from Australia recommends a definition for “phlegmatized” be inserted into chapter 1.2 which reads:

*“phlegmatized” means the addition of an agent (or “phlegmatizer”) to an explosive to facilitate its safe handling and transport. The phlegmatizer acts as barrier between molecules of the explosive to slow down the heat transfer and any resultant reaction and reduce impact and friction sensitivity. Typical phlegmatizing agents include wax, paper, water, alcohol, oils such as petroleum jelly and paraffin as well as polymers such as chlorofluoropolymers.*

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