
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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EXPLOSIVES, SELF-REACTIVE SUBSTANCES AND ORGANIC PEROXIDES

Classification criteria for fireworks

Revision of document UN/SCETD/25/INF.69

Transmitted by the expert from Germany

Explanatory notes

After internal discussions we have decided to revise document UN/SCETD/25/INF.69 in order to correctly reflect to full detail the findings from recent tests. The old document is hereby withdrawn and replaced by this revised document.

1 Introduction

During the 24th session of the Sub-Committee of Experts on the Transport of Dangerous Goods in the Working Group on explosives there was an ongoing discussion on the correct classification of fireworks articles at the 1.3/1.4 boundary.

Since the last meeting in December 2004 Germany has carried out UN-Series 6 trials involving a variety of consumer fireworks and proposes changes to the draft of the default classification table as follows.

2 Shell in mortar, Roman candles, shot tubes

In testing practice of the above mentioned articles the assignment either to hazard division 1.3 or 1.4 by the criterion of burning objects thrown beyond the 15 m threshold may depend on the judging of the amount and intensity of expelled burning objects. The expert from Germany suggests not to judge star effects expelled more than 15 m during a UN 6(c)-test in small amounts in the same way like a fiery projection of a propellant, such as a flame extending more than 15 m.

The reasoning presented by the expert from the United Kingdom in document ST/SG/AC.10/C.3/2004/45, where the fraction of effects propelled beyond the 15 m borderline is taken into consideration for a 1.4 classification, is supported by the expert from Germany.

From these considerations the expert from Germany suggests the following changes to the default table and respective square brackets removed:

- a Roman candle up to a inner diameter of 30 mm and not more than 25% (according to the proposal from UK in document ST/SG/AC.10/C.3/2004/45) of flash composition may be assigned 1.4,
- shot tubes should be dealt with exactly like Roman candles, i. e. going down from 1.1 classification to 1.4 with the same wording.

Giving a limiting mass of pyrotechnic composition of 25 g for Roman candles seems not relevant for the judgement of the hazard since this would only restrict the number of shots per tube, however, not the properties of each individual effect.

The expert from Germany would like to stress that threshold values in all three types, shell in mortar, Roman candles, single shot be kept the same in order to avoid inconsistent classification of batteries being assemblies of such single items. It is only for reasons of clear terminology that the three types cannot be subsummed under a single entry within the default list.

3 Combination/batteries

In order to reflect a consistent terminology, the expert from Germany suggests to change the type name in "Batteries/combination". This corresponds in a more logic way to the definition given in the third column, where assemblies with the same type (batteries) are named before assemblies with different types (combinations), also reflecting the fact that batteries are more frequent than combinations.

4 Low hazard fireworks and novelties

Throw downs and snaps may contain up to 2.5 mg of silver fulminate according to European standards. This figure should be reflected in the default list instead of the currently given 1.6 mg.

5 Sparklers

Small sparklers with less than 15 g of pyrotechnic composition have been tested in a UN 6(c)-test in packs of 40 per inner packaging. The test revealed no relevant production of heat radiation. The expert from Germany suggests to change the maximum number of sparklers per inner packaging to 50 pieces for the 1.4 classification.

Large sparklers with more than 15 g of pyrotechnic composition and in packs of 10 per inner packaging were also tested. Since no relevant amount of heat radiation was observed it is suggested to assign a default classification of 1.4 also to large sparklers.

6 Bangers

In Germany the only permitted type of bangers contain black powder, while report compositions are not permitted. Two types of bangers with up to 6 g of black powder were tested according to the UN test manual. The observations during the tests allow without problems a classification as 1.4G.

Regarding the still missing threshold value for bangers in the default table the expert from Germany proposes to allow for up to 10 g for a default classification of bangers in hazard division 1.4.
