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

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Explosives and related matters: miscellaneous

Classification of a pyrotechnic article “Aquaflame”

Transmitted by the expert from Germany

Introduction

1. The German Bundesamt für Materialforschung « BAM » was approached for the classification of an pyrotechnic article in class 1; the correct compatibility group could not be assigned easily for the following reasons:

- (a) The pyrotechnic article contains a special composition of Sodium Hydroxide, Aluminum powder, Sodium Nitrate, Sulphur and Sucrose. The intended use is the lighting of a fire, e.g. for barbecue, a fireplace, or a bonfire.
- (b) The article is designed to contain two compartments with two components and would be activated with water. Once wetted the Sodium Hydroxide produces an exothermic reaction which activates the combustion of the second component (a mixture of Aluminum powder, Sodium Nitrate, Sulphur and Sucrose). The flame is emitted by the second component.

2. The packaging is as follows:

Inner packaging: each article sealed in a plastic foil (waterproof).

Outer packaging: several articles in a fiberboard box (4G).

Discussion

3. The above described article contains typical pyrotechnic substances, which would justify the use of the compatibility group G. On the other hand, the article has a particular hazard, which is that it can be activated by water. This would rather require assignment of compatibility group L.

4. Water activated explosive articles or substances can be classified as 1.1L, 1.2L or 1.3L. There is no entry with a classification 1.4L and consequently no applicable UN number.

Conclusion

5. BAM's conclusion is to classify this article into hazard division 1.4, given the test outcome allows this, and to assign compatibility group S or G, even though it is designed to function by water-activation. The Working Group of Explosives should be requested to provide its opinion, also in regard of whether there is a gap in the dangerous goods listing for a generic 1.4L article or not.
