

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 2 (f) of the provisional agenda

Explosives and related matters: miscellaneous

Classification of Hand Held Signal Devices

Transmitted by the Dangerous Goods Advisory Council (DGAC)

Introduction

1. Highway flares (commonly referred to as fusees) and similar devices for marine applications are increasingly being sold to consumers for safety purposes. For example, two such devices might be stored in passenger car as part of a kit for use in the event of an emergency, such as an accident, to warn approaching vehicles. In addition, they are widely used by police, fire-fighters and other governmental emergency services. They are widely distributed through auto supply stores, gasoline stations, marinas and retail outlets.
2. These devices, which give off a bright red light when burning, have historically been classified as 1.4S and assigned to UN 0373 SIGNAL DEVICES, HAND.
3. Classification of these devices as 1.4S poses certain practical problems. It raises the question of whether these devices are subject to special storage conditions in retail outlets (e.g., in a magazine) or warehouses (e.g., specially equipped locations). In addition, for local officials (e.g., building inspectors), it raises questions on the need for a license or permit to legally possess, store, purchase, or use fusees. It also raises issues relative to disposal.
4. Over time increased emphasis has been placed on the safety of these devices. New active compositions used in some fusees currently available likely pose far lower risks than those considered when the UN 0373 was first introduced. Testing of certain fusees and their active composition, has shown that neither the fusees themselves nor the active composition meet the criteria for classification as a 4.1 flammable solid – a hazard generally regarded as lower than an explosive hazard. This raises the question of whether these devices should be subject to the Dangerous Goods Regulations when evaluated on the basis of relevant criteria.

Testing

5. The Canadian Explosives Research Laboratory (CERL) conducted flammable solid test UN N.1 on the composition used in certain fusees in common usage. The results showed that the composition did not meet the criteria for classification as a Division 4.1 solid as it did not propagate ignition for a distance of 200mm (average measured burn distance before extinguishing was 50 mm in six trials) and the burn rate was far below the 2.2 mm/sec (average burn speed 0.33 mm/sec). The fusee's themselves, by design, burn at a rate (i.e., a rate of 0.21 mm/sec) substantially lower than the minimum rate specified for flammable solids.

Proposal

6. DGAC proposes that when neither the fusee nor the active composition meets the criteria for classification for Division 4.1, the fusees may be transported as not subject to the Regulations. On this basis DGAC proposes that the following special provision be added against UN 0373:

“XXX When neither the active composition nor the device meets the criteria for classification on the basis of Test UN N.1 in the Manual of Tests and Criteria, these devices may be transported as not subject to these Regulations.”
