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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
(Twenty-fourth session, 1-10 December 2003, agenda item 3 (c))

EXPLOSIVES, SELF-REACTIVE SUBSTANCES AND ORGANIC PEROXIDES

Miscellaneous proposals

A new label for Division 5.2

Transmitted by the expert from Norway

Background

As is well known, the development and sustainability of a fire depends on the availability of oxygen, combustible material, and a sufficiently elevated temperature. In a fire, substances belonging to Division 5.1 contributes oxygen, but normally not combustible material. For these substances to contribute to the fire, as a rule combustible material must be added, e.g. combustible materials transported together with the 5.1 substances, or in the form of contaminations with reducing agents, e.g. metal powders.

Substances belonging to Division 5.2, on the other hand, contain both oxygen and combustible material. They may therefore themselves burn, e.g. if they are ignited by an existing fire, or if they reach a sufficiently high temperature as to undergo an exothermic decomposition, to which they are liable (cf. 2.5.3.1.1).

From the above, it should be self evident that substances of Division 5.2 represent a far greater risk and danger for emergency responders than substances of Division 5.1. It would be favourable if this greater danger involved with Division 5.2 substances is communicated to the emergency responders quickly and efficiently i.e. through the ensuing label or placard.

However, today both Division 5.1 and Division 5.2 substances are labelled with similar labels, the only small difference between these being the class number at the bottom corner of the label. In an emergency situation it might not be easy for the emergency responders to differentiate between these two labels, especially since they must often, due to safety considerations, make observations as well as tactical and strategic planning from a distance. Therefore, in many situations it will be very difficult for the emergency responders to know whether or not they are confronted with the much more dangerous and combustible substance(s) of Division 5.2.

Information theory tells us that precise communication of different meanings is best done through different signs or signals. Having two labels so similar is not the optimal way to communicate the important differences between intrinsic properties of substances in the Divisions 5.1 and 5.2. Having two so similar labels reduces the preciseness and hence the efficiency of the hazard communication of the labelling.

Proposal

Norway is of the opinion that substances of Division 5.1 and substances of Division 5.2 should be labelled in a sufficiently different way, so as to make sure this difference being relatively easily observed also at a distance, and therefore propose to substitute the existing label No. 5.2 with a modified label with the upper half of the label in red colour as shown in fig. 1.

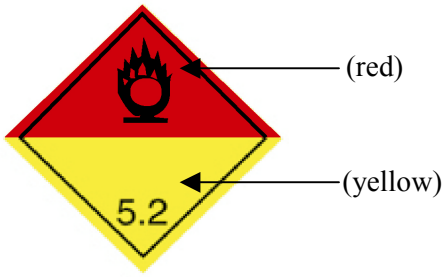

Figure 1.

Justification

Firstly, and most important, a clear difference is achieved between the two labels in Class 5. This in itself, as indicated above, decreases ambiguity and thereby increases safety of the emergency response. In fact, the whole idea of changing the label No. 5.2 is based on safety concerns expressed by a large number of Norwegian fire fighters as regards having two so similar labels. A general remark is that the ambiguity much reduces the information content, and that this in turn could lead to doubts, stress, and to unnecessary information seeking processes taking valuable time. Experience from training and educating approximately 4000 emergency responders in Norway was unanimous: presented with a prototype of the label shown in fig. 1, they all felt such a change in label No. 5.2 would be a major improvement in hazard communication.

Secondly, having two labels for Class 5 is in line with the rest of the labelling system, where each different class/division is labelled with its own label.

Thirdly, adding red colour to the new label symbolizes, as is the case with the red colour on other labels, the existence of combustible material.

And, fourthly, the lower part of the label retains the yellow colour, symbolizing the oxygen content of the substance.

In addition, the proposed new label is kept within the general looks of the "old" label as far as the icon is concerned. In addition, no totally new colours are introduced; the same colours are used as in the overall labelling system. Therefore the new proposed label~~s~~ fits into the overall system of labelling, whose unity is preserved.

Implementation

The change of the existing label No. 5.2 calls for only a minor amendment in existing legislations, as only a minor change in colour is involved; no new icons or numberings are introduced.

In training and education, having two different labels will simplify things both pedagogically and epistemologically, i.e. create an easier situation for both teacher (pedagogically) and student (epistemologically). This since much fewer words are necessary to convey the difference in information content between two different labels, than between two in practice nearly identical ones. As the old saying goes: a picture tells more than a thousand words.

Consequential amendments

In 5.2.2.2.2, under Class 5

substitute label No. 5.2 with the new label proposed in this document; and

change the text under label No. 5.1 to read:

"Symbol (flame over circle): black;
Background: yellow";

at the corresponding place, under (the new) label No. 5.2, insert the text:

"Symbol (flame over circle): black;
Background: upper half red;
lower half yellow"
