

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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Electric storage systems: miscellaneous

Comments on ST/SG/AC.10/C.3/2014/18 – Lithium Batteries and Hazard Communication

Transmitted by the International Civil Aviation Organization (ICAO)

Introduction

1. ICAO supports the development of appropriate hazard communication for articles of Class 9, and particularly those for lithium batteries. ICAO wishes to thank the expert from the United Kingdom for the ideas expressed in ST/SG/AC.10/C.3/2014/18 and welcomes further discussion. The ICAO Dangerous Goods Panel (DGP) have reviewed the paper and wish to offer the following comments.

Discussion

2. Symbols, colours and shapes are important factors when considering the appropriate method used to convey hazard communication; this is especially so in international transport. This is specifically noted in the general introduction to the Model Regulations and is referred to in paragraph 15 of the working paper.

- Personnel handling dangerous goods are very familiar with the “diamond-shaped” hazard label as a method to communicate dangerous goods; first responders frequently use the label as the first method to determine the hazard of the contents, often from a safe distance from the package.
- The use of the colour red in hazard labels is understood to convey a flammability hazard. As the Model Regulations recognises the main hazard represented by lithium batteries as flammability, it would be useful if the new label(s) could contain some red colouring. However, this does not recognise other possible risks, including explosivity, toxicity and corrosivity. In addition, if one wants to emphasise the fact that lithium batteries are in class 9, the use of black and white colours should be considered.
- With regard to the appropriate symbol to be used, ICAO agrees with the suggestion that this should at a minimum include batteries. Further discussion is required to decide if other hazards, such as corrosivity or explosivity, could be included. This might require broadening the discussion to consider divisions within class 9 or the creation of a new class 10.

3. Differing views were expressed with regard to the use of a hazard label for those batteries excepted under the provisions of special provision 188. The Sub-Committee is aware of the ICAO handling label (Figure 1 of ST/SG/AC.10/C.3/2014/18) , required for packages containing lithium batteries shipped under this special provision. Some support was expressed for its incorporation into the Model Regulations on the basis it has been in the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* since 2009. Others supported the modified version as contained in Inf.21 whereas others believed it would be better to transition from the ICAO handling label to whatever hazard label (or mark) is decided upon. This last comment was specifically noted for option 3 which allows for a differentiation between fully regulated and those excepted from the provisions.

4. Most support was expressed for Figure 4 which conveyed the fire hazard of lithium batteries (plus the damaged element) within the normal constraints for Class 9. It was suggested by some that by placing the picture in the lower half of the diamond, the black stripes might detract from the symbol and that it was more clearly seen when occupying the centre of the label (as in Figure 5). However, there was also support for Figure 10 which could be regarded as a useful mechanism to move towards the creation of a new, separate hazard class 10 or hazard divisions within Class 9. With regard to Figures 6 and 7, it was suggested that in poor lighting conditions, the red colour could become indistinguishable from black, thus reducing its effectiveness in communicating the hazard. Therefore if either options 1 or 2 are favoured by the Sub-Committee, ICAO would suggest not including Figures 6 or 7. If they were to be used, an alternative suggestion would be to only permit white for the symbol and number on a red background.

5. For air transport, it is important to differentiate between lithium metal and lithium ion since halon, the only fire suppression system used in passenger aircraft cargo compartments today, cannot suppress a fire that involves lithium metal batteries. In the interests of multimodal harmonization and facilitation in transport, it would be helpful if the Subcommittee could differentiate between the two types of batteries by means of labels. Option 3 suggests the addition of a separate mark (Figure 5.2.2), either with the Class 9 label (for fully regulated) or by itself (for those shipped under SP 188). Consideration could be given to replacing the number 9 by the relevant UN numbers, thus providing appropriate information for air transport. This would also have the benefit of providing additional information if, in future, additional UN numbers are assigned to lithium batteries to cover other hazards such as corrosivity or explosivity.
