



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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Miscellaneous proposals for amendments to the Model Regulations on the Transport of Dangerous Goods: Marking and labelling

Variations of the flame symbol design

Transmitted by the Council on the Safe Transportation of Hazardous Articles (COSTHA)*

I. Introduction

1. COSTHA has identified variances in the flame symbol depicted on flammable material labels in several regulatory texts. Labels depicting the flame symbol include Division 2.1, Class 3, Division 4.1, 4.2 and 4.3, and Division 5.2 labels. COSTHA believes that slight variances in the design should not be a consideration for violation and does not impact safety.

II. Background

2. Industry has experienced rejected or delayed shipments when transporting dangerous goods multimodally due to differences in both domestic and international regulations. Domestic or regional enforcement agents and transportation operators claim “the labeling is wrong”, or more precisely the design of the “flame” is incorrect for the mode of transportation being used.

3. Dangerous goods regulations or documents contain specific provisions for size and color, though specification for symbols is absent or vague. The twenty-third revised edition of the *Model Regulations*, paragraph 5.2.2.2.1 states:

“Labels shall satisfy the provisions of this section and conform, in terms of colour, symbols and general format, to the specimen labels shown in 5.2.2.2.”

4. Its paragraph 5.2.2.2.2 *Specimen Labels* provides a visual depiction of the “flame” as the symbol description for Division 2.1, Class 3, and Class 4, with similar text shown in various recognized regulations.

* A/78/6 (Sect. 20), table 20.5.







Label model No.	Division or Category	Symbol and symbol colour	Background	Figure in bottom corner (and figure colour)	Specimen labels	
Class 2: Gases						
2.1	Division 2.1: Flammable gases	Flame: black or white (except as provided for in 5.2.2.2.1.6 d))	Red	2 (black or white) (except as provided for in 5.2.2.2.1.6 (d))		
3	-	Flame: black or white	Red	3 (black or white)		

Figure 1: Twenty-third revised edition of the *Model Regulations*, paragraph 5.2.2.2.2 Specimen Labels

5. However, Figure 2 below illustrates the variation of the Class 3 label through various international and domestic regulations. Figure 3 illustrates a close-up of the flame design from each of the labels illustrated in Figure 2. The labels illustrated are found in the twenty-third revised edition of the *Model Regulations*, ADR 2023, ICAO Technical Instructions (Doc 9284) 2023-2024 Edition, IMDG Code Amd. 41-22, 49 CFR (United States of America) and Transport Canada’s TDGR (respectively).



Figure 2: Class 3 Label Designs



Figure 3: Close-up of Flame Designs

6. As illustrated in Figure 3, the “flame” designs vary with minute details. Differences include length of the flames, smaller “cut-out” within taller flame, overall height and width of design, thickness of underline, etc. There is also variation in the location of the symbol on the label (how close to the outside edge at the top of the label).

III. Discussion

7. Symbol design should be provided with a variation allowance. Shippers should be allowed to use labels as provided by label manufacturers, regardless of regulation or mode of transport. Transportation should not be denied by the symbol design, when intent and overall design has been met and safety is not affected.

8. If a design variation is not permitted, which design concept shall be required for use on multimodal shipments?

IV. Proposal

9. To allow the use of design variations, so long as the intent and meaning is met, COSTHA proposes to revise 5.2.2.2.1 as follows:

“5.2.2.2.1 Labels shall satisfy the provisions of this section and conform, in terms of colour, symbols and **the** general format **of the symbol and the label**, to the specimen labels shown in 5.2.2.2.”
