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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-third session, 30 June -4 July 2003  
agenda item 6 (b))**

**LISTING, CLASSIFICATION AND PACKING**

**Requirements for toxic by inhalation substances**

**Transmitted by the expert from the United States of America**

**Background**

1. During previous sessions, the Sub-Committee considered amending the Model Regulations to include requirements for substances that are toxic by inhalation (TIH substances). Hazard communication requirements for TIH substances were discussed on the basis of ST/SG/AC.10/C.3/1998/26. However, not all of the issues were discussed to conclusion. The intent of the proposal was to improve the hazard communication requirements for these substances since it is not readily apparent whether a substance poses an inhalation, oral or dermal toxicity hazard and because the inhalation hazard poses a greater risk in transport if inadvertently released. Requirements for packaging of TIH substances to reduce the likelihood of release in transport have generally been completed with the adoption of P601, P602, and P200 as well as the rationalized assignment of the portable tank T codes. During its 22nd session, the Sub-Committee adopted new TIH n.o.s. entries to enhance the hazard communication for these substances. In this paper we are requesting that the Sub-Committee further consider the need to establish distinct hazard communication requirements for this group of substances. This paper addresses labels, placards and documentation requirements.

**Introduction**

2. For emergency responders, labels and placards usually provide the first sign that a substance involved in an incident is dangerous. Responders regularly respond to incidents involving the release or threat of release of dangerous goods in transport. Minimizing the danger of injury and other costs of such events requires knowledge of the substances involved so that appropriate hazard mitigating procedures can be implemented and decisions can be made regarding personal protection, evacuation or traffic diversion. Labels and placards allow emergency responders to determine the hazards presented prior to approaching the incident. For toxic by inhalation (TIH) substances, given their ability to readily disperse

through the atmosphere, it is particularly important that the responder is able to recognize the type of substance involved at a considerable distance from the sight of the incident. To improve information available to responders, the expert from the United States is of the opinion that additional hazard communication is necessary to allow responders to discern when they are confronted with an inhalation toxicity hazard as compared to an oral or dermal toxicity hazard.

3. Division 6.1 includes substances that are toxic by oral, dermal and inhalation routes of exposure. The number of TIH substances included in Division 6.1 is small relative to the number of substances included in Division 6.1. Under the current system, not being able to distinguish TIH substances from other Division 6.1 substances could lead to overly cautious and expensive precautionary measures being taken in the event of an incident involving a Division 6.1 substance that does not meet the TIH criteria. Conversely frequent exposure to other Division 6.1 substances and the lack of specific information relative to inhalation hazards could lead to complacency among response personnel resulting in them being insufficiently cautious in the event of an incident involving a TIH substance and resulting in injury or death of responders and the general public.

4. The expert from the United States of America considers that a label and placard distinct from the existing Division 6.1 label is necessary to effectively communicate the risk of TIH substances to emergency response personnel. Because Division 2.3 and Division 6.1 TIH substances pose the same type of inhalation hazard risk, it is also proposed that the same label and placard be used for both Division 2.3 and Division 6.1 TIH substances. While the proposed labels do not pictorially convey the toxic by inhalation hazard, they are visible from long distances and they are clearly distinct from the label used for other toxic substances. Tests have shown that the label is discernable at a distance of at least 100 metres. As such, they will enable *trained* emergency services personnel to recognize the toxic inhalation hazard the labels and placards are intended to convey.

5. On the basis that the Sub-Committee has discussed this issue previously and has not been able to agree to adopt the labels and placards previously proposed by the expert from the United States, we are requesting that the Sub-Committee adopt amendments to the current labelling specifications for Division 2.3 and 6.1 substances to authorize the use of labels and placards that are modified to indicate that a TIH substance is present. In other words, it is not proposed to add the proposed labels and placards as a replacement of the current labels and placards on a mandatory basis but to allow them as an alternative. This approach will ease the burden on those shippers and carriers that transport TIH substances in international commerce (e.g. between Europe and the United States). Currently these shippers are required to either dual label/placard their shipments or to change labels or placards in the port area.

**Proposal**

6. In 5.2.2.2.2 it is proposed to add two new illustrations of labels as follows:

Next to label No. 2.3 show the following label illustration:



Amend the text under the illustration of label no. 2.3 to indicate: Division 2.3 Symbol (skull and crossbones): black or white inside of a black diamond Background: white; Figure "2" in bottom corner

Next to label No. 6.1 add a new label no. 6.1A as follows:



Add the following text under the illustration of label no. 6.1A to indicate: Division 6.1 Symbol (skull and crossbones): white inside of a black diamond Background: white; Figure "6" in bottom corner. This label may be used as an alternative to label no. 6.1 for liquids that meet the Inhalation Criteria for Division 6.1, Packing Group I.

### Documentation

7. In the case of substances transported under the new TIH NOS descriptions, the fact that a substance is a TIH substance will be clear from the proper shipping name that is used. In the case of Division 2.3 gases, it will be clear from the 2.3 Division indicated in the basic description. However, for Division 6.1 TIH liquids transported under specific shipping names, no information is currently required to be provided on the shipping paper to convey the information that the substance is a TIH substance. It is proposed that on shipping papers for TIH substances under a specific chemical proper shipping name that the words "Toxic\_Inhalation Hazard" shall be entered on the dangerous goods transport document immediately following the dangerous goods description required by 5.4.1.4.1. The word "Toxic" need not be repeated if it otherwise appears in the dangerous goods description.

8. It is proposed that a new paragraph 5.4.1.4.3(e) be added as follows:

*"(e) Division 6.1 toxic by inhalation substances*

For Division 6.1 substances that meet the vapour inhalation toxicity criteria for Packing Group I (see 2.6.2.2.4.3) that are described on the transport document by a proper shipping name that does not convey that the substance is toxic by inhalation, the words "Toxic\_Inhalation Hazard" shall be entered on the dangerous goods transport document immediately following the dangerous goods description required by 5.4.1.4.1. The word "Toxic" need not be repeated if it otherwise appears in the dangerous goods description.

### Identification of Substances Meeting the Inhalation Criteria Division 6.1, Packing Group I

9. To identify those named substances to which the proposed new Division 6.1 label would apply it is proposed that a new special provision be added in column 6 of the Dangerous Goods List as follows:

*"ZZZ This substance is considered to meet the inhalation toxicity criteria of Division 6.1, Packing Group I. The model No. 6.1A label and placard may be used and the substance shall be described on the transport document in accordance with 5.4.1.4.3(e)."*

If this proposal is adopted the expert from the United States will provide a list of substances to which this new special provision should be assigned.

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