

**Committee of Experts on the Transport of Dangerous Goods  
and on the Globally Harmonized System of Classification  
and Labelling of Chemicals**

21 June 2012

**Sub-Committee of Experts on the  
Transport of Dangerous Goods**

**Forty-first session**

Geneva, 25 June – 4 July 2012

Item 10 (a) of the provisional agenda

**Issues relating to the Globally Harmonized System of  
Classification and Labelling of Chemicals:  
corrosivity criteria**

**Sub-Committee of Experts on the Globally  
Harmonized System of Classification and Labelling  
of Chemicals**

**Twenty-third session**

Geneva, 4 – 6 July 2012

Item 4 (c) of the provisional agenda

**Implementation of the GHS: Cooperation with other  
bodies or international organizations**

**Corrosivity classification – assignment of categories/packing  
groups**

**Transmitted by the expert from the United Kingdom**

**Purpose of document**

1. This document contributes to work stream (e) of the joint informal correspondence group on corrosivity criteria, set out in document UN/SCEGHS/21/INF.6 – UN/SCETDG/39/INF.14: “Report findings and make recommendations that meet the need of all sectors with the aim of achieving consistent classification outcomes for skin corrosivity.” Whilst recognizing that conclusions and recommendations are premature at this stage of the work of the correspondence group, it is intended as an informal thought starter from the transport sector perspective.

**Consideration**

2. It makes no difference in classification or any other aspect in supply systems based on GHS whether a corrosive substance is category 1A, 1B or 1C as the symbol, signal word and hazard statement are all the same (see table 3.2.5 in GHS). Indeed table 3.2.1 in GHS, second column makes it clear that these corrosive sub-categories only apply to some authorities. In transport, assigning or changing the packing group is particularly significant as it determines the requirements for the containment system and downstream consequences relating to the transport operation.

3. As illustrated by an outcome of the discussions at the last TDG-GHS Group on Corrosivity Criteria, changing transport conditions e.g. changing PG II to PG I, should only be done when it can be demonstrated that assignment to PG II does not provide an adequate level of safety. Human experience, the low accident rate and often limited consequences of those accidents points to a generally good safety record for the transport of corrosive substances based on current assignments. See for example UN/SCETDG/40/INF.29-UN/SCEGHS/22/INF.17 from ICPP which makes reference to incidents documented and published by the US authorities.

4. For the transport sector, the practice has been that existing classifications/assignments in the Dangerous Goods List should remain unless they have been properly reassessed and a proposal for a change made with appropriate data. This is true for all classes of dangerous goods and continued application of this practice for corrosivity criteria would then also be consistent with the approach for other classes/divisions in transport.

5. As a result of work on the global harmonization of acute toxicity classification criteria, revised criteria were developed and the table in 2.6.2.2.4.1 amended for Division 6.1 in the 14th revised edition of the UN Model Regulations. The effect of these changes were as follows:

- Oral toxicity: some solids currently regarded as non-dangerous would become PG III and conversely some liquids in PG III would become non-dangerous.
- Dermal toxicity: some substances would move from PG II to PG I.
- Inhalation toxicity: some substances would move from PG I to PG II and others from PG III to being regarded as non-dangerous. (dusts and mists).

6. However apart from the odd proposal (e.g. that for mercurous chloride which resulted in it now being classified as UN No. 2025 Division 6.1, packing group III), there have been very few changes to classifications in the DGL resulting from the changes to the acute toxicity criteria.

7. In effect, the transport sector applies a hazard based approach (see 2.0.1.1 of the UN Model Regulations) to initial classifications on the basis of available test data describing the intrinsically hazardous properties of the substance. That data will determine whether a substance meets the lowest threshold at which a substance can be considered to be dangerous in transport. Thereafter the degree of danger in transport is sub-divided for packing purposes (see 2.0.1.3 of the UN Model Regulations) into the three Packing Groups (other than for explosives, gases, radioactive materials, organic peroxides and infectious substances) described as substances presenting low, medium or high danger. The assignment to a Packing Group is presented in the form additional threshold criteria in each Class but, in addition to the test data, a combination of human experience, expert judgement and weight of evidence is taken in to account (See also UN/SCETDG/41/INF.28 submitted by CEFIC). For transport purposes, this is considered to be a risk based approach specific to consideration of multi-modal transport conditions. It is the belief of the expert from the United Kingdom that this process can continue to apply in harmonising with the GHS criteria for corrosivity without compromising the principles of the GHS system.

8. From this point, one way of dealing with the GHS sub-categories having regard to both hazard and risk might be along the following lines, reflecting the fact that the Dangerous Goods List represents current best practice for transport:

- PG I: assigned to specific extreme substances only as currently done in the DGL (this would also apply to mixtures containing a considerable amount of such substances).
- PG II: Skin corrosion Cat 1 A except those covered by the above.
- PG III: Skin corrosion Cat 1 B and 1 C and Corrosive to metal Cat 1.

9. The expert from the United Kingdom would welcome discussion of this possible approach by the correspondence working group during the next joint sub-committee working group session on 4 July.