

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

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Item 3 of the provisional agenda

Listing, classification and packing

**Clarification of generic concentration limits for skin
corrosion classification in the UN Model Regulations**

Transmitted by the expert from China

Objective

1. To invite the Sub-Committee to clarify the generic concentration limits used in the calculation method for corrosive mixtures of Class 8 in the *UN Model Regulations*.

Background

2. According to the calculation method for corrosive mixtures of Class 8 in *UN Model Regulations* (21st edition), mixtures containing corrosive ingredients can be evaluated by calculation using the specific concentration limits (SCL) and generic concentration limits (GCL) of the corrosive ingredients, and the generic concentration limits are used only when there are no specific concentration limits.

3. In accordance with Figure 2.8.4.3 of the *UN Model Regulations* on the calculation method, if the concentration of ingredient of packaging group I is $\geq 5\%$, the mixture is assigned to packaging group I, and if the concentration of ingredient of packaging group I is $< 5\%$ but $\geq 1\%$, the mixture is assigned to packaging group II (as shown in Figure 1 below). It seems that the generic concentration limits for substances of packaging group I to be assigned to packaging group II should be 1% .

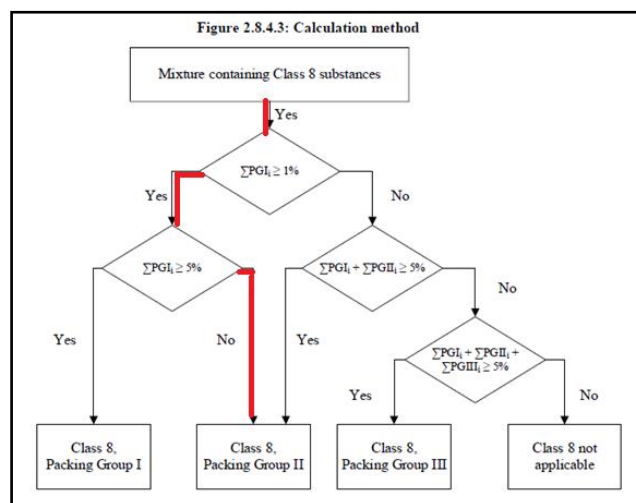


Figure 1: Calculation method in *UN Model Regulations*

4. Section 2.8.4.3.5 specifies that the generic concentration limits used in the calculation formula is the value shown in Figure 2.8.4.3. However, it is not specified whether the generic concentration limits for substances of packaging group I to be assigned to packaging group II is 1 % or 5 %.

5. In section 2.8.4.3.5 example 2, a mixture which contains three substances, A and B of packing group I with concentrations of 3 % and 2 %, and C of packing group III with concentration of 10 % (as shown in Figure 2 below) is assigned to packing group III. Furthermore, 5 % is chosen as the generic concentration limit for substance A of packing group I to be assigned to packing group II.

Example 2: A mixture contains three substances corrosive to skin; two of them (A and B) have specific concentration limits; for the third one (C) the generic concentration limits applies. The rest of the mixture needs not to be taken into consideration:

Substance X in the mixture and its packing group assignment within Class 8	Concentration (conc) in the mixture in %	Specific concentration limit (SCL) for packing group I	Specific concentration limit (SCL) for packing group II	Specific concentration limit (SCL) for packing group III
A, assigned to packing group I	3	30 %	none	none
B, assigned to packing group I	2	20 %	10 %	none
C, assigned to packing group III	10	none	none	none

Calculation for packing group I:

$$\frac{3 (\text{conc A})}{30 (\text{SCL PGI})} + \frac{2 (\text{conc B})}{20 (\text{SCL PGI})} = 0.2 < 1$$

The criterion for packing group I is not fulfilled.

Calculation for packing group II:

$$\frac{3 (\text{conc A})}{5 (\text{GCL PGII})} + \frac{2 (\text{conc B})}{10 (\text{SCL PGII})} = 0.8 < 1$$

The criterion for packing group II is not fulfilled.

Calculation for packing group III:

$$\frac{3 (\text{conc A})}{5 (\text{GCL PGIII})} + \frac{2 (\text{conc B})}{5 (\text{GCL PGIII})} + \frac{10 (\text{conc C})}{5 (\text{GCL PGIII})} = 3 \geq 1$$

The criterion for packing group III is fulfilled, the mixture shall be assigned to class 8, packing group III.

Figure 2: Section 2.8.4.3.5 example 2 in the UN Module Regulations

6. Although it is stated in 2.8.4.3.5 that the formula should be used when SCL is available instead of Figure 2.8.4.3, it is not stated that the formula cannot be used when no SCL is available. If we assume a case where no SCL is available (or understood as SCL is exactly equal to GCL), the critical concentrations for substances of packaging group I to be assigned to packaging group II obtained from Figure 2.8.4.3 and example 2 of section 2.8.4.3.5 are two different values. And, we cannot regard this as reasonable.

Proposal

7. Reviewing the proposal about the calculation method, Figure 2.8.4.3 was first proposed and approved by the Sub-Committee at its 49th session (INF.65). The formula and examples were later proposed to assist the understanding in cases with SCL. Figure 2.8.4.3 is more in line with the classification principle that the proposers want to put forward.

8. So, the experts from China would like to invite the Sub-Committee to clarify the following two issues:

- (a) whether example 2 is appropriate; and
 - (b) how to determine the generic concentration limits used in the calculation formula in section 2.8.4.3.5, especially the generic concentration limits for substances of packaging group I to be assigned to packaging group II.
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