

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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ISSUES RELATING TO THE GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS)

Suggested text for implementation of the GHS criteria in Class 8 of the UN Recommendations on the Transport of Dangerous Goods by means of a full reference to the criteria of GHS

Addendum to ST/SG/AC.10/C.3/2008/83

Transmitted by the expert from the Netherlands

Introduction

1. The issue of full inclusion of the GHS criteria or a reference is mentioned as a decision point in document ST/SG/AC.10/C.3/2008/83. Two options are mentioned:

- (a) Full inclusion of the GHS corrosivity criteria. UN/SCETDG/33/INF 17 presents an elaborated text proposal for Chapter 2.8.
- (b) Full reference to the GHS criteria.

To facilitate the discussion the Netherlands prepared an elaborated text proposal for Chapter 2.8 based on a full reference to the GHS criteria. The proposal is contained in Annex 1.

2. In working document ST/SG/AC.10/C.3/2008/83 The Netherlands states that especially for the classification of mixtures and solutions it is important for transport to decide on including clear criteria for corrosivity in line with GHS as soon as possible in order to keep up with the implementation of GHS in other sectors and regions.

3. The Netherlands tried to elaborate on an extension of the present Chapter 2.8, solely with GHS classification criteria for mixtures. This would require additional changes to align the present criteria with GHS or result in an imbalanced text. Based on this experience The Netherlands is of the opinion that the inclusion of the GHS corrosivity criteria for substances and mixtures can not be separated.

4. The Netherlands is aware of the intention of the UNSCEGHS (see UN/SCEGHS/15/INF.5 and ST/SG/AC.10/C.4/30 paragraphs 29 and 30) to perform an editorial revision on the GHS criteria in Chapter 3.2 (Skin corrosion/irritation) to enhance the user-friendliness of the text. Since the criteria itself will not be effected, this editorial review need not hold up the implementation of the criteria in the field of transport.

5. The Sub-Committee is invited to consider the two options: full text as reflected in UN/SETDG/33/INF 17 or a full reference as presented in Annex 1.

Preparation of the text proposal

6. The attached text proposal is based on the following starting material:

- (a) Chapter 2.8 of the UN TDG including the changes as agreed on during the 32th session of the Sub-Committee of Experts on the Transport of Dangerous Goods.
- (b) Chapter 2.16 of the GHS 'Corrosive to metals'.
- (c) Chapter 3.2 of the GHS 'Skin corrosion/irritation'.

7. The text proposal includes references to the GHS criteria for corrosivity.

8. To visualise the changes in comparison to the present Chapter 2.8 of the UN TDG the following font types are used in Annex 1.

Underline: this text is an addition to the text of Chapter 2.8.

~~Strikethrough~~: this text is deleted from Chapter 2.8.

In 2.8.2.4 the assignment to packing group III for substances, including mixtures which are corrosiv to metal only, is added. This text can be found in 2.8.2.5 under (c) in the fifteenth revised edition of the Model Regulation.

Annex 1.

CHAPTER 2.8

CLASS 8 – CORROSIVE SUBSTANCES

2.8.1 Definitions

Class 8 substances (corrosive substances) are substances including mixtures which by chemical action, will cause severe damage when in contact with living tissue, or, in the case of leakage, will materially damage, or even destroy other goods or means of transport.

Skin corrosion is the production of irreversible damage to the skin; namely, visible necrosis through the epidermis and into the dermis, following the application of a test substance for up to 4 hours.

A substance that is *corrosive to metal* is a substance which by chemical action will materially damage, or even destroy, metals.

2.8.2 Assignment of packing groups

2.8.2.1 Substances and preparations of Class 8 are divided among the three packing groups according to their degree of hazard in transport as follows:

- (a) *Packing group I*: Very dangerous substances and preparations;
- (b) *Packing group II*: Substances and preparations presenting medium danger;
- (c) *Packing group III*: Substances and preparations presenting minor danger.

2.8.2.2 Allocation of substances listed in the Dangerous Goods List in Chapter 3.2 to the packing groups in Class 8 has been made on the basis of experience taking into account such additional factors as inhalation risk (see 2.8.2.3) and reactivity with water (including the formation of dangerous decomposition products). ~~New substances, including mixtures can~~ Substances, including mixtures, not mentioned by name in the Dangerous Goods List of Chapter 3.2 shall be assigned to packing groups on the basis of classification criteria according to GHS. The classification criteria for skin corrosion reflects the length of time of contact necessary to produce full thickness destruction of human or synthetic skin in accordance with the criteria according to GHS. ~~in 2.8.2.4.~~ Liquids, and solids which may become liquid during transport, which are judged not to cause full thickness destruction of human skin shall still be considered for their potential to cause corrosion to certain metal surfaces. This metal corrosion potential shall be based on the classification criteria ‘corrosive to metals’ of GHS. ~~in accordance with the criteria in 2.8.2.5 (e) (ii).~~

2.8.2.3 A substance or preparation meeting the criteria of Class 8 having an inhalation toxicity of dusts and mists (LC50) in the range of packing group I, but toxicity through oral ingestion or dermal contact only in the range of packing group III or less, shall be allocated to Class 8 (see note under 2.6.2.2.4.1).

2.8.2.4 In assigning the packing group to a substance in accordance with 2.8.2.2, account shall be taken of human experience in instances of accidental exposure. In the absence of human

experience the grouping shall be based on data obtained from experiments in accordance with OECD Guideline 404¹ or 435². A substance which is determined not to be corrosive in accordance with OECD Test Guideline 430³ or OECD Test Guideline 431⁴ may be considered not to be corrosive to skin for the purposes of these Regulations without further testing. Substances including mixtures which are judged not to cause full thickness destruction of intact skin but which are corrosive to metals on the bases of the GHS criteria shall be assigned to packing group III.

2.8.2.5 Packing groups are assigned to corrosive substances including mixtures in accordance with the following criteria:

Table 2.8.1 Assignment of Packing group to substances and mixtures based on Skin corrosive subcategory or metal corrosion category

	Classification of substance or mixture:	
Packing group I	Skin corrosive subcategory 1A	
Packing group II	Skin corrosive subcategory 1B	
Packing group III	Skin corrosive subcategory 1C	Corrosive to metals Category 1

2.8.2.6 The classification criteria according to GHS are laid down in :

- Chapter 3.2, for skin corrosion.
- Chapter 2.16 for corrosive to metal.

~~2.8.2.5 Packing groups are assigned to corrosive substances in accordance with the following criteria:~~

~~(a) *Packing group I* is assigned to substances that cause full thickness destruction of intact skin tissue within an observation period up to 60 minutes starting after the exposure time of three minutes or less;~~

¹ OECD Guideline for the testing of chemicals No. 404 "Acute dermal irritation/Corrosion" 1992.

² OECD Guideline for the testing of chemicals No. 435 "In Vitro Membrane Barrier Test Method for Skin Corrosion" 2006.

³ OECD Guideline for the testing of chemicals No. 430 "In Vitro Skin Corrosion: Transcutaneous Electrical Resistance Test (TER)" 2004.

⁴ OECD Guideline for the testing of chemicals No. 431 "In Vitro Skin Corrosion: Human Skin Model Test" 2004.

~~(b) Packing group II is assigned to substances that cause full thickness destruction of intact skin tissue within an observation period up to 14 days starting after the exposure time of more than three minutes but not more than 60 minutes;~~

~~(c) Packing group III is assigned to substances that:~~

~~(i) ——— cause full thickness destruction of intact skin tissue within an observation period up to 14 days starting after the exposure time of more than 60 minutes but not more than 4 hours; or~~

~~(ii) are judged not to cause full thickness destruction of intact skin tissue but which exhibit a corrosion rate on either steel or aluminium surfaces exceeding 6.25 mm a year at a test temperature of 55 °C when tested on both materials. For the purposes of testing steel, type S235JR+CR (1.0037 resp. St 37 2), S275J2G3+CR (1.0144 resp. St 44 3), ISO 3574 or Unified Numbering System (UNS) G10200 or a similar type or SAE 1020, and for testing aluminium, non-clad, types 7075 T6 or AZ5GU T6 shall be used. An acceptable test is prescribed in the *Manual of Tests and Criteria*, Part III, Section 37.~~

~~**NOTE:** Where an initial test on either steel or aluminium indicates the substance being tested is corrosive the follow up test on the other metal is not required.~~
