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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

Corrosiveness of solids
Packing Group III, for steel and aluminium

Transmitted by the expert from Austria

1. Background

In the twentieth session of the Sub-Committee of Experts only part 2 of the Austrian proposal ST/SG/AC.10/C.3/2002/10 has been discussed in depth. Still remaining is the problem of different wordings on the definitions of the substances that are to be classified into class 8:

The first sentence of para. 2.8.2.2 of Chapter 2.8 of the **UN Model Regulations** on the Transport of Dangerous Goods as well as of the **IMDG Code** and the **ICAO Technical Instructions** reads as follows:

“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 risks (see 2.8.2.3) and **reactivity with water** (including the formation of dangerous composition products). New substances Substances 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 in accordance with the criteria in 2.8.2.5 (c) (ii).”

In the **IMDG Code** the following text is found in 2.8.1.2.6:

“Many substances in this class only **become corrosive after having reacted with water, or with moisture in the air**. This fact is indicated in the Dangerous Goods List in Chapter 3.2 by the words “in the presence of moisture ...”. The reaction of water with many substances is accompanied by the liberation of irritating and corrosive Gases. Such gases usually become visible as fumes in the air.”

In the **RID** and **ADR** for the European land mode transport the above texts are missing, but one can find the following text in No. 2.2.8.1.1 second sentence:

“The heading of this Class covers other substances which **form a corrosive liquid only in the presence of water**, or which produce corrosive vapour or mist in the presence of natural moisture in the air.”

The **new** para 37.4.1.1 of the **Manual of Tests and Criteria** reads:

"Test C.1: Test for determining the corrosive properties of liquids and **solids that may become liquid during transport** as dangerous goods of class 8, packing group III."

2. Discussion

The above mentioned differences are likely to lead to different classifications for the various modes of transport.

In that twentieth session many experts were of the opinion, that only solid substances that react with moisture in the air - namely hygroscopic substances - and form corrosive products fall into the scope of class 8, but not substances which form corrosive solutions without being hygroscopic. If this opinion should be dealt by the majority of experts, Austria proposes to change the wording of para. 2.8.2.2 as follows:

3. Proposal

“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 risks (see 2.8.2.3) and reactivity with water (including the formation of dangerous composition products). New substances **Liquids and hygroscopic solid substances** 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 in accordance with the criteria in 2.8.2.5 (c) (ii).”

If this is not carried by the majority of experts Austria asks the experts to look for clarification as to whether

- (a) all solids should be tested for the forming of corrosive liquids with water;
- (b) only hygroscopic solids should be tested for the forming of corrosive liquids with water;
- (c) all solids should be tested for the production of corrosive gases / vapours / mist with water (and how);
- (d) only hygroscopic solids should be tested for the production of corrosive gases / vapours / mist with water (and how);
- (e) all solids or only hygroscopic solids should be tested for the production of irritating gases / vapours / mist with water (and how).

After decision it is suggested that an ad hoc working group should elaborate a text for the UN Recommendations on the results of the discussions which would be acceptable for all modes of transport.

Additional remark:

The formation of irritating and corrosive gases is not (yet) covered by the criteria in the UN Recommendations.
