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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

Thirty-third session
Geneva, 30 June-9 July (a.m.) 2008
Item 4 of the provisional agenda

LISTING, CLASSIFICATION AND PACKING

Package requirements for dangerous goods which may evolve a hazard if not effectively sealed

Transmitted by the Expert from Australia*

Background

1. As noted in informal document UN/SCETDG/32/INF.19, an incident occurred at an Australian port in September 2007 involving a container load of Endosulphan (UN2761). When the container was opened it was noted the air was stale and the cargo was emitting a strong odour. It appears this was due to the high temperature inside the container. Stevedores attempting to unpack the container were affected by the odour with one person overcome by fumes requiring medical assistance.

2. After attendance by emergency services the container and its contents were examined to determine the cause of the odour and why it affected the stevedores. It was found that the goods were packed in 4G boxes with an inner plastic liner sealed with a 'twist tie'. Examination

* In accordance with the programme of work of the Sub-Committee for 2007-2008 approved by the Committee at its third session (refer to ST/SG/AC.10/C.3/60 para. 100 and ST/SG/AC.10/C.3/34, para. 14).

of the packages found that the twist tie arrangement did not provide a secure seal and allowed the material inside to react with the atmosphere, emitting vapours which in turn caused a break down of the tape sealing the 4G cartons. This in turn allowed the vapours to be released into the container.

3. The entry for UN2761 (ORGANOCHLORINE PESTICIDE, SOLID, TOXIC) allows for transport in a 4G single packaging under packing instruction P002 with no requirement for an inner liner. However, sections 4.1.1.1 and 4.1.1.2(a), state that the arrangement of the package should be such that it can contain its contents under normal conditions of transport and not be adversely affected by its contents.

4. In informal document UN/SCETDG/32/INF.19 the expert from Australia suggested that the potential of solid organochlorine pesticides, as listed in Table 1, to emit toxic gases should be recognised when transported. However the proposal focussed on the UN2761 and UN3155 entries, noting the latter is also only subject to packing instruction P002. The paper also noted that the IMDG code addresses the risks associated with a range of goods, when exposed to air, in section 4.1.1.7.2. However, this section is not replicated in the UN Model Regulations or the ADR.

Table 1: List of solid active ingredients currently in use
(WHO recommended Classification of Pesticides by Hazard 2004)

Active ingredient	WHO class	CAS No	Toxicity		Remarks
			Oral LD50(rat)	Inhalation	
Chlordane	II	57-74-9	200mg/kg	100mg/ m ³ (4hr) (LC50 cat)	Note 1 Note 2 UN2761
DDT	II	50-29-3	87mg/kg	toxic fumes when heated	Note 1 Note 2 UN2761
Dicofol	III	115-32-2	575mg/kg	toxic fumes when heated	UN8027
Endosulfan	II	115-29-7	18mg/kg	80mg/m ³ (4hr) (LC50 rat)	UN2761
Hexachlorobenzene	Ia	118-74-1	10000mg/kg	3600mg/m ³ (LC50 rat)	Note 1 Note 2 UN2729
Hexachlorocyclohexane (HCH)	II	608-73-1	100mg/kg	400µg/kg (TCLo man)	Note 2 UN2761
Lindane (Gamma HCH)	II	58-89-9	76mg/kg	toxic fumes when heated	Note 2 UN2761
Methoxychlor	U	72-43-5	5000mg/kg	toxic fumes when heated	UN2811
Pentachlorophenol	Ib	87-86-5	27mg/kg	355mg/m ³ (LC50 rat)	Note 1 Note 2 UN3155

Note 1: Banned or restricted by Stockholm Convention

Note 2: Prior informed consent (PIC) procedure required

5. The expert from Australia recognises that inhalation toxicity should be addressed by the general provisions of chapter 4.1 of the Model Regulations, but this does not specifically require hermetic sealing where goods have the potential to emit toxic gases. This poses a risk to those involved in the handling of these materials and results in modal inconsistency, as the issue is specifically addressed by the IMDG code.

6. In informal document UN/SCETDG/32/INF.19, the expert from Australia recommended that a new special packing provision be applied to P002. However, upon further examination, the expert from Australia believes a more holistic view is needed to cover all situations where the goods in question may evolve a greater risk when not hermetically sealed.

Proposal

7. It is proposed that the text of section 4.1.1.7.2, as written in the 2006 Edition of the IMDG Code, be incorporated into the UN Model Regulations with minor changes to read:

“4.1.1.7.2 Unless otherwise specified in the Dangerous Goods List, packages containing substances which:

- (a) evolve flammable gases or vapour;*
- (b) may become explosive if allowed to dry;*
- (c) evolve toxic gases or vapour;*
- (d) evolve corrosive gases or vapour; or*
- (e) may react dangerously with the atmosphere;*

shall be hermetically sealed.”
