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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-fifth session, 5-14 July 2004  
Item 6 of the provisional agenda

LISTING, CLASSIFICATION AND PACKING

Liquid and Solid variants in the Dangerous Goods List  
Discrepancies between the UN Model Regulations and the ICAO Technical Instructions

Transmitted by the expert from the United Kingdom

**Background**

1. The expert from the United Kingdom notes that in November 2001 the ICAO Dangerous Goods Panel agreed to review and as far as possible align their Packing Instructions with those in the Model Regulations. The main exercise was completed in September 2003 and the 2002 Dangerous Goods Panel agreed that a changeover would take place in 2007/8 edition of the ICAO Technical Instructions.
2. However during the exercise to allocate air Packing Instructions to UN numbers three discrepancies with the UN text concerning solids and liquids were identified. They are listed in the **Annex 2** to this document with the comments made to the Panel which provide the justification for the proposals. The substances are shown as being liquid and solid in the Technical Instructions but not in the UN Model Regulations.
3. Upon further examination it will be seen that the other modal regulations have not been consistent in their approach and the expert from the United Kingdom has been asked by the ICAO Dangerous Goods Panel to draw this problem to the attention of the Sub-Committee.

4. At the December 2003 Sub-Committee meeting the expert from the United Kingdom submitted UN/SCETDG/24/INF.57 inviting comments on suggested changes. Comments were received from the secretariat (see ST/SG/AC.10/C.3/48, par. 93) and the expert from the United Kingdom was invited to prepare an official proposal.
5. Having considered the matter further and taking into account the comments made, the expert from the United Kingdom proposes the following amendments to the Dangerous Goods List as indicated below in **Annex 1**.

Explanation of the proposed changes

6. From the melting point of about 73 °C, it is proposed that the entry for UN 1733 Antimony trichloride is changed to the solid entry (use of P002, etc).
7. It is proposed that UN 1740 is confirmed as the solid entry for Hydrogendifluorides by addition of "SOLID" to the Proper Shipping Name (PSN). A new entry "XXXX" is created for (aqueous) solutions and to be consistent with other existing solution entries (UN 2817 and UN 3421), a subsidiary risk of 6.1 is indicated.
8. Based on the two isomeric forms of crotonic acid it is proposed to confirm UN 2823 as the solid form by adding "SOLID" to the PSN and creating a new entry "YYYY" for the liquid form. It is proposed to refer to the solid and liquid forms in the PSNs rather than the isomer names to allow for commercial products that may be mixtures of the isomers. This was the general approach taken during the review of solid/liquid entries previously at UN level.

Proposal

ANNEX 1

UN No.	Name and description	Class or division	Subsidiary risk	UN packing group	Special provisions	Limited quantities	Packagings and IBCs	Portable tanks and bulk containers	Special provisions	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)

Change to solid entry

1733	ANTIMONY TRICHLORIDE	8		II		1kg	P002 IBC08	B2 B4	T3	TP33
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EXISTING ENTRY -add "SOLID"

1740	HYDROGEN-DIFLUORIDES, SOLID N.O.S.	8		II		1kg	P002 IBC08	B2 B4	T3	TP33
		8		III	223	5kg	P002 IBC08 LP02	B3	T1	TP33

NEW ENTRY

XXXX	HYDROGEN-DIFLUORIDES, SOLUTION N.O.S.	8	6.1	II		1L	P001 IBC02		T7	TP2
		8	6.1	III	223	5L	P001 IBC03		T4	TP1

2823	CROTONIC ACID SOLID	8		III		5 kg	P002 IBC08 LP02		T1	TP33
YYYY	CROTONIC ACID LIQUID	8		III		5L	P001 IBC03 LP01		T4	TP1

## ANNEX 2

Packing Instructions:		UN	ICAO TIs	IMDG	RID/ ADR	Comments made for the ICAO Meeting
1733	Antimony trichloride	Solid	814	P002	P002	Antimony trichloride is a colourless, transparent, very hygroscopic, crystalline mass. Its melting point is about 73°C. It is soluble in alcohol, acetone and acids; with water it forms antimony oxychloride. The entry for antimony trichloride, liquid in the Technical Instructions is therefore not clear.
		Liquid	P001	P001		
1740	Hydrogen-difluoride	Solid	815	P002	P002	It is reasonable to have separate entries for the solid entry and (aqueous) solution entry here. UN 1811 and UN 3421 provide some justification, though it should be noted that a "SOLUTION" entry does not exist for UN 2439 in the 13th UN Orange Book.
		Liquid	825			
2823	Crotonic acid	Solid	822	P002		Crotonic acid exists in two isomeric forms, (cis- and trans-). The trans- isomer has a melting point of about 72 degrees C and is soluble in water. The cis- isomer (otherwise known as isocrotonic acid) is a liquid at room temperature, melting point about 14 degrees C. Both isomers exhibit corrosivity.
		Liquid	P001 (12th Ed.)	818		