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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

Sixty-second session
Geneva, 3-7 July 2023
Item 3 of the provisional agenda
Listing, classification and packing

Present and future products in the liquid petroleum gas industry - proposal for a new UN number

Transmitted by the World LPG Association*,**

Executive summary: Traditional liquid petroleum gas (LPG) (primarily propane-butane), for the purpose of lowering the carbon footprint of the product, can be partly replaced in the future by blends of renewable/recycled dimethyl ether (DME) and LPG at any ratio. These blends, according to the current regulations, would normally be assigned to UN 3161 Liquified gas, flammable, n.o.s. However, to ease the identification of the product being transported in the case of an emergency, we propose to create a new UN number for "Dimethyl ether and hydrocarbon gas mixtures, liquefied, n.o.s.". This new UN number will also cover mixtures of DME with hydrocarbon gases that are not classed as LPG. However, their emergency actions are identical.

Action to be taken: Create a new UN number for DME and LPG blends as "Dimethyl ether and hydrocarbon gas mixtures, liquefied, n.o.s.".

Related documents: Document ST/SG/AC.10/C.3/2022/53 and informal document INF.24 from the sixty-first session.

I. Background

1. Document ST/SG/AC.10/C.3/2022/53 of the sixty-first session contained the background information on the way that the LPG industry is changing and adapting to meet its renewable goals.

* A/77/6 (Sect. 20), table 20.6

** This document was scheduled for publication after the standard publication date owing to circumstances beyond the submitter's control.

2. Informal document INF.24 from the sixty-first session set out the proposals of the LPG industry for discussion of a new UN number.

3. The Sub-Committee in its sixty-first session welcomed the initiative of the liquefied petroleum gas industry to offer, in the context of the circular economy and the sustainable use of natural resources, solutions to reduce the overall carbon footprint. On the specific proposal of informal document INF.24 to introduce a new UN number for blends with much higher percentage of DME, the experts who spoke raised general caution and expressed the need to extend views across sectors other than the transport sector, e.g., the implications in the non-road mobile machinery sector and agreed to resume consideration of this subject at its next session.

II. Proposal

4. Add a new entry to the Dangerous Goods List in 3.2.2 as follows:

(1)	(2)	(3)	(4)	(5)	(6)	(7a)	(7b)	(8)	(9)	(10)	(11)
XXXX	DIMETHYL ETHER AND HYDROCARBON GAS MIXTURES, LIQUEFIED, N.O.S.	2.1			274 392	0	E0	P200		T50	

5. In 4.1.4.1, packing instruction P200, Table 2, add a new entry as follows:

UN No.	Name and description	Class or Division	Subsidiary hazards	LC_{50} (ml/m³)	Cylinders	Tubes	Pressure drums	Bundles of cylinders	MEGCs	Test period (years)	Test pressure (bar)	Filling ratio	Special packing provisions
XXXX	DIMETHYL ETHER AND HYDROCARBON GAS MIXTURES, LIQUEFIED, N.O.S.	2.1			X	X	X	X	X	10			v, z

6. In 4.2.5.2.6, portable tank instruction T50, add a new entry as follows:

UN No	Non-refrigerated liquefied gases	Max. allowable working pressure (bar) Small; Bare; Sunshield; Insulated; respectively[a]	Openings below liquid level	Pressure-relief requirements[b] (see 6.7.3.7)	Maximum filling ratio
XXXX	Dimethyl ether and hydrocarbon gas mixtures, liquefied, n.o.s.	See MAWP definition in 6.7.3.1	Allowed	Normal	See 4.2.2.7

III. Safety implications

7. No negative safety implications are foreseen from the proposal. Having a dedicated UN number for this product, will enable easy identification by the emergency services without the need of checking the transport documentation and this can only have a positive impact.