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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

1 December 2022

### Sixty-first session

Geneva, 28 November-6 December 2022

Item 3 of the provisional agenda

### Listing, classification and packing

## Revision of classification of tetramethylammonium hydroxide

Submitted by the European Chemical Industry Council (Cefic) and  
Dangerous Goods Advisory Council (DGAC)

### I. Introduction

1. Earlier in the week, following the discussion in plenary of documents ST/SG/AC.10/C.3/2022/68, ST/SG/AC.10/C.3/2022/72, INF.19, and INF.21, dealing with the reclassification of tetramethylammonium hydroxide (TMAH), the topic was referred to an informal working group under the leadership of the expert from Belgium. Due to the complexity of the issue and the multiple views and options, it was felt that an informal discussion could possibly yield a way forward. This document captures our understanding of the majority views coming out of the informal working group and presents a modified proposal accordingly.

2. There was little support for assigning concentration limits to all packing groups on the basis of the incident involving the 8.75% TMAH solution. Although there was some support for Option 2 of INF.21, a preference for Option 1 emerged during the discussions and we have based this revised proposal on Option 1 accordingly.

3. The following revisions to Option 1 have been made in response to concerns raised during the informal working group and related discussions:

- (a) The concentration limit for PG I aqueous solutions has been revised to include 25%.
- (b) Proposed SP XXX in paragraph 5 has been modified to include provisions based on human experience for the classification of formulations that are not aqueous solutions and contain a surfactant in a concentration > 1%.
- (c) Provisions for a transitional period have been introduced in a new SP ZZZ in paragraph 6.
- (d) SP 279 has been assigned to the entries for aqueous solutions to reflect they have been classified on the basis of human experience.
- (e) A consequential amendment to the Guiding Principles has been incorporated in paragraph 8.

4. As reported to the plenary session, there was also discussion in the informal working group about revising the cut-off value between PG II and III from 2.5% to 2.38%. The representative from DGAC promised to consult with technical experts within DGAC and

Cefic about this. After consultation, we learned that this would cause greater problems than anticipated so we have retained 2.5% as we originally proposed.

## II. Proposal

5. In 3.3, add a new special provision XXX as follows:

“XXX This entry applies only to aqueous solutions comprised of water, tetramethylammonium hydroxide (TMAH), and no more than 1 % other constituents. Other formulations containing tetramethylammonium hydroxide must be assigned to an appropriate generic or n.o.s. entry (e.g., UN 2927, Toxic liquid, corrosive, organic, n.o.s., etc.), except as follows:

other formulations containing a surfactant in a concentration > 1% and with not less than 8.75% tetramethylammonium hydroxide must be assigned to UN 2927, TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S., PG I, and

other formulations containing a surfactant in a concentration > 1% and with more than 2.38% but less than 8.75% tetramethylammonium hydroxide must be assigned to UN 2927, TOXIC LIQUID, CORROSIVE, ORGANIC, N.O.S., PG II.”

6. In 3.3 add a new special provision ZZZ to introduce a transitional period as follows:

“ZZZ The provisions of 3.2.2 from the twenty-second revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations may continue to be applied until 31 December 2026.”

7. Modify the entries for UN 1835 as follows (new text is underlined, deleted text strikethrough):

UN No.	Name and description	Class or division	Subsidiary hazard	UN packing group	Special provisions	Limited and excepted quantities		Packagings and IBCs		Portable tanks and bulk containers	
								Packing instruction	Special packing provisions	Instructions	Special provisions
1835	TETRAMETHYLAMMONIUM HYDROXIDE <u>AQUEOUS SOLUTION with not less than 2.5 % tetramethylammonium hydroxide</u>	<u>6.1</u>	<u>8</u>	<u>I</u>	<u>279</u> <u>XXX</u> <u>ZZZ</u>	<u>0</u>	<u>E5</u>	<u>P001</u>		<u>T14</u>	<u>TP2</u>
1835	TETRAMETHYLAMMONIUM HYDROXIDE <u>AQUEOUS SOLUTION with more than 2.5 % but less than 25 % tetramethylammonium hydroxide</u>	<u>8</u>	<u>6.1</u>	<u>II</u>	<u>279</u> <u>XXX</u> <u>ZZZ</u>	<u>1 L</u>	<u>E2</u>	<u>P001</u> <u>IBC02</u>		<u>T7</u>	<u>TP2</u>
1835	TETRAMETHYLAMMONIUM HYDROXIDE <u>AQUEOUS SOLUTION with not more than 2.5 % tetramethylammonium hydroxide</u>	<u>8</u>		<u>III</u>	<u>223</u> <u>XXX</u> <u>ZZZ</u>	<u>5 L</u>	<u>E1</u>	<u>P001</u> <u>IBC03</u> <u>LP01</u>		<u>T7</u>	<u>TP2</u>
3423	TETRAMETHYLAMMONIUM HYDROXIDE, SOLID	<u>6.1</u> <del>8</del>	<u>8</u>	<u>II</u>	<u>279</u> <u>ZZZ</u>	<u>1 kg</u> <u>0</u>	<u>E2</u> <u>E5</u>	<u>P002</u> <del>IBC08</del> <u>IBC99</u>	<del>B2, B4</del>	<del>T3</del> <u>T6</u>	<u>TP33</u>

8. Add to table 4.2 in the Guiding Principles the following line (new text is underlined):

**Table 4.2: Substances allowed for transport in IBCs subject to approval by the competent authority**

UN	Name	Class/Div.	PG	Subsidiary hazard(s)
<u>3423</u>	<u>TETRAMETHYLAMMONIUM HYDROXIDE, SOLID</u>	<u>6.1</u>	<u>I</u>	<u>8</u>