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INLAND TRANSPORT COMMITTEE

**Working Party on the Transport  
of Dangerous Goods**

**Joint Meeting of the RID safety Committee and the  
Working Party on the Transport of Dangerous Goods**

**(Bern, 18-22 March 2002)**

**PROPOSAL TO CLARIFY DEFINITIONS FOR FLAMMABLE CORROSIVE  
LIQUIDS**

Transmitted by CEFIC

SUMMARY	
<b>Executive Summary:</b>	<ul style="list-style-type: none"><li>- Re-introduction of the reference to the boiling point in the classification of flammable corrosive liquids in Class 3, PG I or Class 8, PG I</li><li>- Adoption of the definitions, used in the UN Recommendations, for Packing Group in Class 3</li></ul>
<b>Action to be taken:</b>	<ul style="list-style-type: none"><li>- Amend Note 6 of subsection 2.2.3.1.1</li><li>- Include definitions of UN Recommendations and remove a set of Notes and Footnotes</li></ul>
<b>Related documents:</b>	None

## **Introduction**

**In RID/ADR 2001** the following provisions apply when having to classify substances that are flammable as well as corrosive.

- Subsection 2.2.3.1.3 (Definitions of PG for Class 3)
- PG I: flammable liquids having a boiling point or initial boiling point  $\leq 35^{\circ}\text{C}$  and flammable liquids having a  $\text{FP} < 23^{\circ}\text{C}$ , which are either highly toxic (according to criteria of 2.2.61.1) or highly corrosive (according to criteria of 2.2.8.1)
- PG II: flammable liquids having a  $\text{FP} < 23^{\circ}\text{C}$ , which are not classified under PG I
- PG III: flammable liquids having a  $\text{FP}$  of  $23^{\circ}\text{C}$  to  $61^{\circ}\text{C}$  inclusive, and substances of 2.2.3.1.4

- Subsection 2.1.3.9. (Table of precedence of hazards - extract)

	Class 8, PG I	Class 8, PG II	Class 8, PG III
Class 3, PG I	3, I	3, I	3, I
Class 3, PG II	8, I	3, II	3, II
Class 3, PG III	8, I	8, II	3, III

- Subsection 2.2.3.1.1 Note 5  
Corrosive liquids having a  $FP \geq 23^{\circ}\text{C}$  are substances of class 8 (see 2.2.8.1)
- Subsection 2.2.3.1.1 Note 6  
UN No. 2734 Amines, liquid, corrosive, flammable, n.o.s., UN No. 2734 Polyamines, liquid, corrosive, flammable, n.o.s. and UN No. 2920 Corrosive liquid, flammable, n.o.s., are substances of Class 8 (see 2.2.8.1)
- Subsection 2.2.8.3 Footnote b  
Flammable corrosive liquids with  $FP < 23^{\circ}\text{C}$ , other than UN 2734 and 2920, are substances of Class 3
- Subsection 2.2.8.3 Footnote c  
Flammable slightly corrosive liquids having a FP between  $23^{\circ}\text{C}$  and  $61^{\circ}\text{C}$ , are substances of class 3

Unlike RID/ADR 2001, **RID/ADR 1999** made a reference to the boiling point in Marginal [2]800, (7), (a):

Flammable corrosive liquids with  $FP < 23^{\circ}\text{C}$ , other than substances of  $54^{\circ}\text{(a)}$  and  $68^{\circ}\text{(a)}$ , are substances of class 3. The headings of the item numbers were:

- $54^{\circ}$ : Liquid amines/polyamines, highly corrosive or corrosive, flammable, having a  $BP > 35^{\circ}\text{C}$  (UN 2734 (a) and (b) listed)
- $68^{\circ}$ : Liquid corrosive substances/solutions/mixtures, flammable, having a  $BP > 35^{\circ}\text{C}$  (UN 2920 (a) and (b) listed)

Due to the absence of the criterion for a boiling point and considering the table of precedence of hazards, liquids and liquid (poly)amines, which have a  $FP < 23^{\circ}\text{C}$  and which are highly corrosive, will be classified in class 3, PG I as UN 2733 (Amines or Polyamines, flammable, corrosive, n.o.s.) or as UN 2924 (Flammable liquid, corrosive, n.o.s.) instead of in class 8, PG I as UN 2734 (Amines or Polyamines, corrosive, flammable, n.o.s.) or as UN 2920 (Corrosive liquid, flammable, n.o.s.).

No substances would be classified as UN 2734 or UN 2920. These 2 entries should then be removed from Table A although they would still exist in the UN Recommendations !

## **Proposal 1**

This reference to the boiling point could be re-introduced in ADR 2001 by amending Note 6 of subsection 2.2.3.1.1 as follows:

“UN No. 2734 Amines, liquid, corrosive, flammable, n.o.s., UN No. 2734 Polyamines, liquid, corrosive, flammable, n.o.s. and UN No 2920 Corrosive liquid, flammable, n.o.s., having a boiling point or an initial boiling point exceeding  $35^{\circ}\text{C}$  are substances of Class 8 (see 2.2.8.1)”

This correction will ensure that these substances are properly classified in class 8, PG I as previously.

## **Proposal 2**

Although proposal 1 solves an immediate problem, it may be worthwhile looking if the definitions, used in the **UN Recommendations** (see below) for Packing Group in Class 3, could not be used

<b>Packing Group</b>	<b>Flash Point (closed cup)</b>	<b>Initial Boiling Point</b>
I	--	≤35°C
II	< 23°C	>35°C
III	≥23°C ≤61°C	>35°C

There is indeed no difference in the classification of substances between the Dangerous Goods Lists of RID/ADR and the UN Recommendations.

Therefore an additional proposal is tabled

- a) Replace the current definitions for PG in subsection 2.2.3.1.3 by the (simpler) definition of the UN Recommendations
- b) Delete the Notes and Footnotes mentioned above i.e.
  - Note 5 of subsection 2.2.3.1.1
  - Note 6 of subsection 2.2.3.1.1
  - Footnote c of subsection 2.2.8.3
  - Footnote b of subsection 2.2.8.3

A table (related to classes 3 and 8) is included at the end of this document, illustrating how the 2 sets of definitions match as well as how the deleted Notes and Footnotes are covered by the table of precedence of hazards.

The adoption of the new definition of Packing Group for Class 3 in RID/ADR would not affect the classification of flammable toxic liquids as this is adequately covered by the table of precedence of hazards and Notes 3 & 4 of subsection 2.2.3.1.1 and Footnotes j & k of subsection 2.2.61.3

### **Justification**

Proposal 1 is a simple way to re-establish the previous allocation requirements as in RID/ADR 1999

Proposal 2 offers however the following advantages:

- The proposed definitions are much simpler to interpret.
- In combination with the table of precedence of hazards the use of these definitions does result in a classification of substances that is identical to the current classification, without needing these Notes and Footnotes. Therefore no need for reclassification.
- This solves the specific problem of the classification of highly flammable and highly corrosive liquids as class 8 substances, as described above
- More importantly this would be a further step towards harmonisation as the UN definition is already used in the IMDG code and IATA Dangerous Goods Regulations.

### **Safety implications**

None

**Feasibility**

No problem as there is no need for re-classification of substances.

**Enforceability**

No problem

Table of precedence of hazards (class 3 – class 8)

<b><u>RID/ADR</u></b> (criteria)	<b><u>Class 8, PG I</u></b> Highly corrosive	<b><u>Class 8, PG II</u></b> Corrosive	<b><u>Class 8, PG III</u></b> Slightly corrosive	<b><u>UN</u></b> (criteria)
<b><u>Class 3, PG I</u></b> Flammable and $BP \leq 35^{\circ}C$ or $FP < 23^{\circ}C$ and HC	3, I  (Footnote b) (UN 2733+2924)	3, I	3, I	<b><u>Class 3, PG I</u></b>
				(flammable)   $BP \leq 35^{\circ}C$
<b><u>Class 3, PG II</u></b> $FP < 23^{\circ}C$ and (not PG I)	8, I  (Note 6) (UN 2734+2920)	3, II	3, II	<b><u>Class 3, PG II</u></b>
				$FP < 23^{\circ}C$   $BP > 35^{\circ}C$
<b><u>Class 3, PG III</u></b> $23^{\circ}C \leq FP \leq 61^{\circ}C$	8, I  (Note 5)	8, II  (Note 5)	3, III  (Footnote c)	<b><u>Class 3, PG III</u></b>
				$23^{\circ}C \leq FP \leq 61^{\circ}C$   $BP > 35^{\circ}C$