HARMONIZATION WITH THE UN MODEL REGULATIONS ON THE TRANSPORT OF DANGEROUS GOODS

PRESURE RECEPTACLES FOR LIQUIDS

NEW CHAPTER 4.1.3.6

Transmitted by CEFIC

SUMMARY

Executive Summary: The information paper seeks to highlight the differences between 4.1.3.6 of UN 14th edition (Pressure receptacles for liquids and solids) and existing ADR/RID 4.1.4.4 (PR1-PR7).

1. INTRODUCTION

The Ad Hoc Working Group on the Harmonization of RID/ADR/ADN with the UN Recommendations on the Transport of Dangerous Goods met in Geneva, Palais des Nations, from 23-25 May 2005. Proposed draft amendments are given in the addendum to the report of the working group, TRANS/WP.15/AC.1/2005/42/Add.1. Some amendments, which should be discussed by the Joint Meeting in plenary, have been left in square brackets. One of the open issues was the deletion of the existing ADR/RID 4.1.4.4, particular requirements applicable to the use of pressure receptacles for substances other than those of class 2.

During the discussion CEFIC offered to submit a comparison table highlighting the differences between 4.1.3.6 of UN 14th edition (Pressure receptacles for liquids and solids) and existing ADR/RID 4.1.4.4 (PR1-PR7).

2. COMPARISON TABLE

In table 1, the above mentioned comparison table is given. Aspects addressed are the test pressure, capacity, filling, periodic test & inspection and requirements as given in the relevant packaging instruction for the UN numbers listed in existing PR1 – PR7. This comparison table is drafted to facilitate the discussion on whether 4.1.4.4 can be deleted. It appeared that PR4 - PR7 are assigned to only one or two individual UN numbers and are in some aspects substances specific.
SUGGESTIONS FOR CONSIDERATION

With reference to document TRANS/WP.15/AC.1/2005/42/Add.1 regarding the existing 4.1.4.4 the following alternatives are offered for further consideration:

Alternative 1:
- Delete 4.1.4.4
- Insert in chapter 1.6 at the appropriate place (1.6.1.5?) the following:
  "Pressure receptacles for substances other than those of class 2, manufactured before 1 January 2007/1 July 2007 in accordance with the requirements of ADR/RID 4.1.4.4 in force up to 31 December 2006, but which are not in accordance with the requirements of 4.1.3.6, applicable as from 1 January 2007, may continue to be used for their entire lifetime under the provisions as prescribed in 4.1.4.4."
- For UN 1614 (listed in PR7), replace P601 with P099 in 3.2, dangerous goods list, column (8)
- Delete all PR-1 to PR7 in 3.2, dangerous goods list, column (8)

Alternative 2:
- Delete 4.1.4.4
- Delete all PR1 to PR7 in 3.2, dangerous goods list, column (8)
- Retain the specific text for the individual UN numbers of PR4, PR5 and PR7 in new PPxx in the relevant packing instruction as follows:
  (from PR4)
  Insert in P601: PPxx For UN No. 1185, the mass of the contents shall not exceed 0.67 kg per litre capacity. A package shall not weight more than 75 kg.
  (from PR5)
  Insert in P601: PPxy For UN No. 2480 and 2481, the substance shall be packed in receptacles made of pure aluminium having a wall thickness of not less than 5 mm or in receptacles of stainless steel. The receptacles shall be fully welded.
  (from PR7)
  Insert in P601: PPxz For UN No. 1614, when completely absorbed by an inert porous material, shall be packed in metal receptacles of a capacity of not more than 7.5 litres, placed in wooden cases in such a manner that they cannot come into contact with one other. The receptacle shall be entirely filled with porous material which shall not shake down or form dangerous spaces even after prolonged use under impact, even at temperatures of up to 50 °C.
- Insert in chapter 1.6 at the appropriate place (1.6.1.5?) the following:
  "Pressure receptacles for substances other than those of class 2, manufactured before 1 January 2007/1 July 2007 in accordance with the requirements of ADR/RID 4.1.4.4 in force up to 31 December 2006, but which are not in accordance with the requirements of 4.1.3.6, applicable as from 1 January 2007, may continue to be used for their entire lifetime under the provisions as prescribed in 4.1.4.4."

CEFIC prefers the above “alternative 1” to align with the UN Model regulations as much as possible.
<table>
<thead>
<tr>
<th>RID/ADR PRno.</th>
<th>RID/ADR Relevant packaging instruction of the UN numbers listed in PRno.</th>
<th>Test pressure (bar)</th>
<th>Capacity (l)</th>
<th>Filling</th>
<th>Periodic test/inspection</th>
<th>Miscellaneous</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR1</td>
<td>P400 13x P402 6x P401 1x P601 1x</td>
<td>10 6 6 10</td>
<td>According to chapter 1.2, &quot;pressure receptacle&quot; Cylinder: 150 Pressure drum: 150-1000 Bundle of cylinders: 3000 Tubes: Class 2</td>
<td>450</td>
<td>95% of capacity cylinder at 50 °C. Not liquid full at 55°C</td>
<td>10 years (P400, 401, 402, 601)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>90% (5% empty at 50 °C)</td>
<td></td>
</tr>
<tr>
<td>PR2</td>
<td>P401 4x</td>
<td>6 4</td>
<td>According to chapter 1.2, &quot;pressure receptacle&quot; Cylinder: 150 Pressure drum: 150-1000 Bundle of cylinders: 3000 Tubes: Class 2</td>
<td>450</td>
<td>95% of capacity cylinder at 50 °C. Not liquid full at 55°C</td>
<td>85% or specific (kg/l)</td>
</tr>
<tr>
<td>PR3</td>
<td>P601 6x P602 1x</td>
<td>10 10</td>
<td>According to chapter 1.2, &quot;pressure receptacle&quot; Cylinder: 150 Pressure drum: 150-1000 Bundle of cylinders: 3000 Tubes: Class 2</td>
<td>250</td>
<td>95% of capacity cylinder at 50 °C. Not liquid full at 55°C</td>
<td>1 kg/l</td>
</tr>
<tr>
<td>PR4</td>
<td>P601 1x</td>
<td>10</td>
<td>According to chapter 1.2, &quot;pressure receptacle&quot; Cylinder: 150 Pressure drum: 150-1000 Bundle of cylinders: 3000 Tubes: Class 2</td>
<td>75 kg weight package</td>
<td>95% of capacity cylinder at 50 °C. Not liquid full at 55°C</td>
<td>0.67 kg/l</td>
</tr>
</tbody>
</table>

Table 1: Comparison of new 4.1.3.6 (UN 14th edition) and existing 4.1.4.4 (PR1-PR7)
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th>According to chapter 1.2, “pressure receptacle”</th>
<th>Not specified in PR5</th>
<th>95% of capacity cylinder at 50 °C. Not liquid full at 55°C</th>
<th>90%</th>
<th>10 years (P601)</th>
<th>5 years</th>
<th>PR5: 5 mm wall thickness for aluminium receptacle drum &gt;100 kg, rolling hoops or stiffening ribs needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>PR5</td>
<td>P601 2x</td>
<td>10</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5 years</td>
<td></td>
</tr>
<tr>
<td>PR6</td>
<td>P601 1x</td>
<td>10</td>
<td>Calc. pressure 21</td>
<td>2 bar leak proof ness test</td>
<td>According to chapter 1.2, “pressure receptacle” Cylinder: 150 Pressure drum: 150-1000 Bundle of cylinders: 3000 Tubes: Class 2</td>
<td>450</td>
<td>95% of capacity cylinder at 50 °C. Not liquid full at 55°C</td>
<td>92%</td>
<td>10 years (P601)</td>
</tr>
<tr>
<td>PR7</td>
<td>P601 1x (RID/ADR) P099 (UN)</td>
<td>?? (P099)</td>
<td>6</td>
<td>?? (P099)</td>
<td>7.5</td>
<td>95% of capacity cylinder at 50 °C. Not liquid full at 55°C</td>
<td>Not specified in PR7</td>
<td>10 years (P601)</td>
<td>Not specified in PR7</td>
</tr>
<tr>
<td>---</td>
<td>P001 P002</td>
<td>6</td>
<td>--</td>
<td>According to chapter 1.2, “pressure receptacle” Cylinder: 150 Pressure drum: 150-1000 Bundle of cylinders: 3000 Tubes: Class 2</td>
<td>-</td>
<td>95% of capacity cylinder at 50 °C. Not liquid full at 55°C</td>
<td>-</td>
<td>5 years</td>
<td>-</td>
</tr>
</tbody>
</table>