

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

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Sub-Committee of Experts on the Transport of Dangerous Goods

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Item 6 (c) of the provisional agenda

Miscellaneous proposals for amendments to the Model Regulations on the Transport of Dangerous Goods: packagings

Comments on 2016/11: Water temperature during internal pressure (hydraulic) test with plastics packagings, composite packagings (plastics receptacles), plastics IBCs and composite IBCs (plastic receptacles)

Transmitted by the expert from the United Kingdom

Introduction

1. The expert from the United Kingdom has carefully reviewed the latest paper from the German expert on the water temperature used during hydraulic pressure testing with plastics packaging ST/SG/AC.10/C.3/2016/11. Together with INF.13, containing comments from ICIBCA and ICPP. We have also looked at the original paper presented at the 47th Session (ST/SG/AC.10/C.3/2015/15) and the accompanying INF.13.
2. The United Kingdom notes that the earlier papers did not provide justification for the proposed change. The current paper purports to provide some justification in paragraph 4. That is, “Different practices have developed which cause competitive disadvantages and are contrary to the intention to have harmonized provisions as a basis for the worldwide acceptance of UN approved packagings”. However, there is no evidence provided of this malpractice or any failures in the use of packaging tested in this way.
3. It is also claimed in paragraph 4 that the UN permits cooling of the water. This is not the case; the current text for the Internal Pressure test is silent on temperature. As we understand it, temperature would have been considered when the original text was developed, but the elasticity of plastics materials was dealt with in this test by extending the period of the test to 30 minutes. Whilst other materials are only tested for 5 minutes.
4. In the United Kingdom’s view, a key consideration that has been overlooked in this debate is that this test is not the only one done on plastics packaging. Indeed, two tests lay down specific temperatures for testing, in order to comprehensively explore the properties of plastics packaging. The drop test is carried out with packaging and content at -18°C or lower and the stacking test at not less than 40°C. A packaging that would only pass a hydraulic test when the water was at very low temperature, is likely to be so elastic that it will fail the stack test or would have such a low performance rating as to be unusable for dangerous goods. The remaining test, the Leakproofness Test, also involves water at an

unspecified temperature. If the temperature was as critical as suggested in paper 2016/11, then this would be a better candidate for amendment because it is the only variable, as a result of the testing being done at fixed pressures.

5. Another important consideration is that the Internal Pressure test is a performance measure test, in that with the exception of the minimum test pressure of 250 kPa for packing group I, the pressure applied is set by the client. A packaging that does not perform at the level requested is simply retested with a lower rating. A lower rating will in turn reduce the range of products that can be safely transported in the container. The marked performance of the packaging includes a substantial safety factor in relation to the filling substances permitted.

6. The current paper from Germany does not provide any new information to support their proposal. And in our view, the argument to dismiss the counter proposal from INF.13 (from the last meeting of the UN Sub-Committee) to apply correction factors, acts to undermine this German proposal. This is because that dismissal was based on the fact that the evidence provided was only based on the testing of 1 product in 1 polymer; and the paper from Germany is also based on the testing of 1 product in 1 polymer.

7. No attempt has been made, to correlate the results of the research project with real containers and their UN marked performance. The paper claims that at 21 °C the containers failed the test, whereas the evidence submitted shows that around 40% of the containers were able to take 300 kPa at 30 °C for the required 30 minutes.

8. Finally, the expert from the United Kingdom endorses the comments made in INF.13 from ICIBCA and ICPP. We would be content to support the proposal to add the requirement for the water temperature to be included on the test report.
